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BULLETIN OF THE HISTORY OF MEDICINE

ORGAN OF THE AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE
AND THE JOHNS HOPKINS INSTITUTE OF THE HISTORY OF MEDICINE

Founded by HENRY E. SIGERIST

Acting Editor—OWSEI TEMKIN

VOLUME XXII NOVEMBER-DECEMBER, 1948 NUMBER 6

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THE JOHNS HOPKINS PRESS

BALTIMORE 18, MARYLAND

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Acting Editor—OWSEI TEMKIN

Correspondence relating to the publication of papers should be addressed to The Acting Editor, Bulletin of the History of Medicine, 1900 East Monument Street, Baltimore 5, Maryland, U. S. A.

Twenty-five reprints without covers will be furnished to contributors free of cost. An order slip for additional reprints, giving the cost, is sent with the galley proof to each contributor and must be returned immediately to the Editor.

The journal is published bimonthly. One volume of at least 500 pages is published during the year.

Beginning with Volume XXIII, No. 1 (January-February, 1949) the subscription rate will be increased to $6.00 a year in the United States and its possessions; $6.25 in Canada; and $6.50 in other foreign countries. Single numbers, when available, will be $1.25 each. Members of the American Association of the History of Medicine will receive the Bulletin on payment of $6.00 annual dues, of which $5.00 will be for a year's subscription to the Bulletin.

This journal will publish book reviews, and publishers are requested to send review copies to the Editor.

Volumes III-VIII and XXI-XXII of the Bulletin of the History of Medicine are available through the Johns Hopkins Press for $5.00 a volume, Volumes IX-XX for $2.50 each. Single numbers (if available) are $1.00 each. Volumes I-II are out of print.

Supplements to the Bulletin are published at irregular intervals and are sold individually, subscribers to the Bulletin being granted a reduction of price. Standing orders for the whole series of Supplements may be addressed to

THE JOHNS HOPKINS PRESS

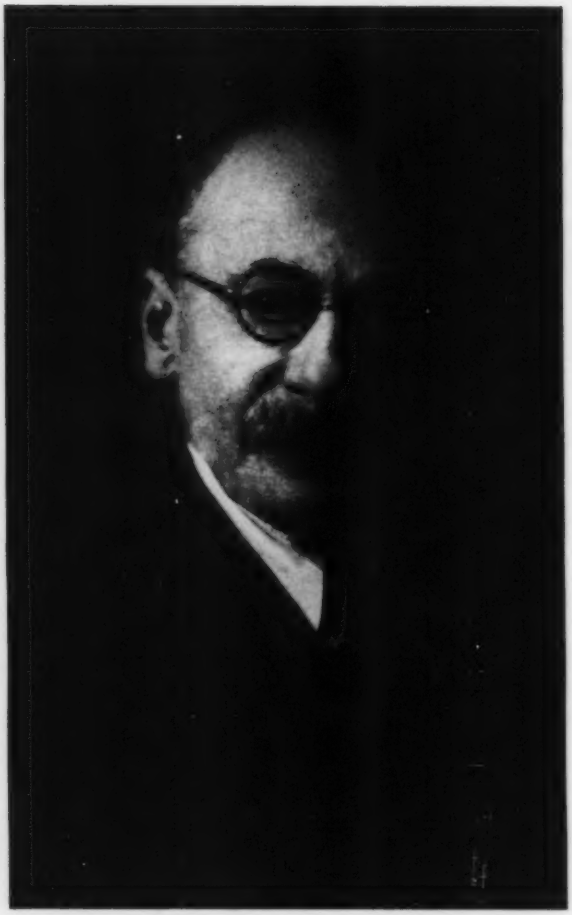
BALTIMORE 18, MARYLAND, U. S. A.

PUBLISHED BIMONTHLY

January-February, March-April, May-June, July-August, September-October, November-December

Made in United States of America

Entered as second-class matter January 3, 1935, at the post office at Baltimore, Maryland, under the Act of March 3, 1879.



Dr. Max Neuburger

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EDITORIAL

PROFESSOR NEUBURGER'S EIGHTIETH BIRTHDAY

OWSEI TEMKIN

On December 8, 1948, Professor Max Neuburger celebrates his eightieth birthday. Since July he has made his home in this country with his son, Dr. Frederick Neuburger, in Buffalo, N. Y. Upon his arrival, the American Association of the History of Medicine, which counts him among its honorary members, sent him a letter of welcome.[1] Now we in the United States are proud to know that his birthday will find Professor Neuburger in our midst.

Professor Neuburger is the Nestor of medical history. His work as a scholar and teacher has given him a dominating position among the men who represent the history of medicine in its classical form, and it has inspired a generation of younger workers. Born in Vienna in 1868, Professor Neuburger received his M. D. degree in 1893, and devoted himself to neurology. The interest of his early years in this specialty documented itself in his *Die historische Entwicklung der experimentellen Gehirn- und Rückenmarks physiologie vor Flourens* which appeared in 1897. At that time Theodor Puschmann represented medical history in Vienna. Puschmann is remembered for his *History of Medical*

[1] Cf. *Bull. Hist. Med.*, 1948, vol. 22, p. 488 f.

Education and his edition and German translation of the work of Alexander of Tralles. Those were the days in which physicians were supposed to have received a classical education and when it was taken as a matter of course that historians of medicine possessed the tools to work in any period of medicine from Hippocrates to their own time. This was the tradition which Dr. Neuburger inherited. However, in the first decades of the present century there was some danger of medical history's losing its balance through a one-sided emphasis upon philological and archival work. Such work is necessary. It is a mistake to assume that any history can flourish long if its roots in the original documents of the past are cut off, or if the historian must judge his texts on the mere authority of philologists. Throughout his work Professor Neuburger has shown his intimacy with languages old and modern and his great ability to utilize the material of archives. His beautiful monograph on the doctrine of the healing power of nature, his studies on medicine in Flavius Josephus and Aulus Gellius, his edition of Gall's correspondence, might be singled out as cases in point. But there existed a tendency to consider discovery and publication of manuscript material and critical bibliographic surveys as ends in themselves. To have counterbalanced this tendency by a broad concept of the history of medicine based on detailed investigation yet permeated by a philosophical spirit sensitive to all cultural relations of medicine was one of the great merits of Professor Neuburger's *History of Medicine*. The first volume dealing with antiquity appeared in 1906 (English translation 1910) and the second, covering the middle ages, followed in 1910 (English translation of the first part in 1925). The work was not continued through the Renaissance and modern period. A short substitute for this missing part can be seen in Professor Neuburger's introduction to the second volume of the great *Handbuch der Geschichte der Medizin* which he, together with Julius Pagel, brought out between 1902 and 1905. Besides, there is no century from the sixteenth on to whose medical history Professor Neuburger has not contributed in one form or another by his research on Vives, Bacon's relation to medicine, Bordeu and early endocrinology, his biographies of Reil and Nothnagel, to mention but a few.[2]

In 1917 Dr. Neuburger became "Professor ordinarius" at the University of Vienna where he worked in the charming surroundings of the Institute of the History of Medicine which he had founded. I met Pro-

[2] For a bibliography of Professor Neuburger's writings up to 1943 see Solomon R. Kagan, Professor Max Neuburger, *Bull. Hist. Med.*, 1943, vol. 14, pp. 423-448.

fessor Neuburger in his Institute in 1929 when he welcomed a group of young people from Leipzig who, under Professor Henry E. Sigerist's leadership, had attended a medico-historical congress in Budapest. I shall never forget the friendly enthusiasm with which Professor Neuburger showed us his collections which were full of the spirit of Vienna's great medical past. Professor Neuburger devoted much work to the medical history of Vienna, thus honoring a university which, in turn, was honored by his membership. Then in 1938 the ties were rudely severed. Germany and the National Socialists took over Austria. In September of that year an international congress of medical history was held in Jugoslavia; Professor Neuburger, whose forthcoming seventieth birthday was to be celebrated, was prevented from attending the meeting by the Nazi Dean. Professor Neuburger had to leave his native land and found refuge in London where the Wellcome Historical Medical Museum received him on its staff. Thus it became possible for him to continue his work which, among other contributions, led him to an evaluation of British medicine and its relationship to the Viennese school. The *Bulletin* is glad to be able to publish elsewhere in the present number an article which Professor Neuburger sent us just before leaving England.

A " Festschrift " in honor of Professor Neuburger's eightieth birthday is being brought out in Vienna under the auspices of an international committee.[3] Everywhere his colleagues, friends and pupils remember him. We wish to join them, pay our tribute to the great historian of medicine, and wish him a long, active and happy future.

[3] While this article was in process of publication the following biography of Professor Neuburger reached us: Dr. Emanuel Berghoff. *Max Neuburger, Werden und Wirken eines österreichischen Gelehrten.* Vindobona: Wilhelm Maudrich. 1848. (Wiener Beiträge zur Geschichte der Medizin III).

FEYJOO

A SPANISH SCEPTIC IN MEDICINE

MAX NEUBURGER

Father Benito Geronimo Feyjoo y Montenegro (born in Casdemiro, October 8, 1676; died, December 26, 1764) was a teacher of theology at the University of Oviedo. Feyjoo, who embraced the monastic state, became General of the Order of St. Benedict, a dignity of great consideration, besides which, his immense erudition, being joined with wit and excellent talent at composition, advanced him to other honors, both academical and ecclesiastical.[1] The professed design of Feyjoo was "to explode vulgar errors, which he does with a freedom surprising in a Spaniard, and with a decency peculiar to true wit and good sense." In these words the anonymous translator of Feyjoo's essay on medicine characterized his author for the English reader.[2]

Feyjoo acquired the highest reputation by his work entitled *Teatro Critico Universal* which appeared between 1726 and 1739, and which, in its first volume, included the above mentioned essay "Medicina."[3] "It was too interesting to pass unanswered, and dull men had a fine opportunity for raillery at a priest who ventured out of his science. However he replied to no more than two. One of them was Don Martin Martinez, an eminent physician, his intimate friend, who had opposed him with great temper and politeness. . . . In his reply . . . he considers an objection very naturally made, that other sciences labour under uncertainty as well as medicine. His answer is, that he is partial to no science, not even his own, but that he apprehends a notable difference between medicine and other sciences in that respect."[4] This remark of the anonymous translator gives but a faint indication of the literary controversy about medicine carried on by Feyjoo's adversaries as well as himself.[5]

[1] Cf. *Enciclopedia universal ilustrada Europeo-Americana*, tomo XXIII, 1924, p. 1159 ff.

[2] *An Exposition of the Uncertainties in the Practice of Physic.* Written originally in Spanish by Benito Geronimo Feijoo . . . Translated from the seventh edition. London, 1751, p. III ("To the English Reader").

[3] The Spanish original has been reprinted in the *Clásicos Castellanos*, vol. 48, Madrid, 1941, pp. 107-162.

[4] *An Exposition* etc. pp. III-IV. Martin Martinez' "Carta Defensiva" as well as Feyjoo's "Respuesta" were published in the second volume of the *Teatro Critico Universal* (Nueva Impresion, Madrid, 1779, pp. 322-382).

[5] According to a list of the controversial literature published in *Clásicos Castellanos*,

Feyjoo's essay on medicine is now little remembered in the English speaking world; but it deserves to be brought to the attention of the modern reader. This has been done on the basis of the English translation of 1751 [6] by contracting and rearranging the most important passages into a uniform whole.

In order to demonstrate how little reason the poor patient has to place any confidence in medicine, it will suffice to verify the principle here laid down, that the medical art, as it is practised by its most learned professors, is hitherto very imperfect. But this is a matter of fact, for they themselves confess it. If the medical writers had not thus ingenuously confessed the uncertainty of their art, their perpetual contradictions would have exposed it. Everything in physic is controverted, therefore everything is disputable. This has been the misfortune of physic ever since its conception. I am not an enemy to Physic, on the contrary I esteem it much. There are doubtless diseases which Nature alone cannot cure, and which she may cure by the assistance of medicine, as appears in the Venereal Disease. I acknowledge that in cases of manifest danger it is prudent to hasten to her assistance, and that frequently the sudden appearance of a salutary effect is an indication that it is the effect of a remedy applied in time. I am sensible that opium, the bark, emetics and many other medicines of manifest activity have performed wonders. All I am offended at is that the promises of physicians extend beyond the extent of their science and power; that they are wandering in the dark whilst they pretend to be crowned with rays. At present they are divided into Hippocratists, Galenists, Chymists, and pure experimentalists; for as to the Paracelsists and Helmontians, they are almost entirely demolished. And they take different measures in their practice according to this difference of parties. But this difference and contrariety is not only observable between physicians of different systems, but even among those who follow the same. Thus in Spain almost all the physicians are Galenists, and it seldom happens that two or three, if consulted separately, agree in a cure. But it does not even rest here. We may observe the same opposition among those who are entirely governed in their practice by the same author. One fixes upon one prescription in *Riverius*—

p. 55 ff., 40 items concerned with medicine were published between the appearance of the first and second volume of the *Teatro Critico*.

[6] Cf. above, footnote 2.

the general guide of our ordinary physicians—another chooses some other.[7]

There is hardly a maxim relating to the cure of diseases which is not converted not even excepting that celebrated one *Contraria contrariis curanda sunt*. And certainly this principle taken in a general sense is either false or useless. It is useless, if by the contrariety on the part of the medicine is meant the virtue which expels the morbific matter; for in this sense it is a self-evident truth, and means no more than this, that the morbific matter may be removed by that which can remove it. The maxim is false, if understood of the contrariety of sensible qualities, since all contraries of this sort are not remedies, and there are infinite numbers of remedies, which are not contraries of this sort. If they interpret this axiom of the contrariety in occult qualities, or, as others explain it, of an opposition *a tota substantia*, then it is equally useless. For this opposition is not discovered by philosophy, but by experience. And if by experience I discover that such a remedy is opposed to such a disease, there is not the least necessity for this axiom.

But leaving this principle, let us descend to particulars, and consider the doubts, which occur in the most common medicines. The first that offers itself to our consideration is Bleeding. Hippocrates was the first who authorized bleeding.[8] After him Galen raised its reputation, and extended its use. Galen was followed by all succeeding physicians down to Paracelsus, whose opposition did not prevent the revival of it after his time, for it flourishes to this day,

[7] However, Feyjoo clears himself from the charge of rigid scepticism. In the preface "to the English Reader" he is quoted as saying: "A rigid sceptic is one who admits nothing to be certain, and in matters of opinion, keeps himself in perfect suspence, lest he should allow an inequality in the probable between two opposite opinions. This is not my character; for I think there is something *certain* in Medicine, and I admit inequality in what is merely *probable*. . . . I see [the very physicians] almost universally divided in their practice. And if they have not ascertained the truth, what need I apologise for my doubts? I have not read many medical authors, but I have read enough to convince me that there is hardly an assertion in Physic uncontroverted. If I had read more, probably my doubts would have increased."

Feyjoo quotes especially the following medical authors: Petrus Aponensis, Cornelius Agrippa, Sydenham, Baglivi, Etmuller, Ramazzini, Le François, Martinez.

[8] "Some, however, there are who affirm with more caution, that the maxims of Hippocrates are not easily examined by the light of observation; and here and there one is bold enough to disavow his doctrine entirely. *Synapius*, for instance, a physician of Hungary, who within a few years past published a Tract entitled *De Vanitate Falsitate et Incertitudine Aphorismorum Hippocratis*" (p. 18).

though very differently as to the application of it. However, it has withstood many great adversaries, who condemn it in general, and almost without exception. Such were among the Ancients, Chrysippus, Aristogenes, Erasistratus, and Strato, and not to mention others, I believe we ought to esteem Asclepiades one. In modern times it has been opposed by Paracelsus, Helmont, Petrus Severinus, Crollius, Quercetanus, Poterius, Faber, Crusius, Tozzi, and many other eminent men. Now, according to the common way of judging, it cannot be denied that an opinion derives probability from such names as these. And as they not only condemn bleeding as useless, but likewise as hurtful, it follows that *probably* bleeding is always hurtful. If it be said, that the probability of this opinion is but small in comparison with the much greater that attends the contrary, I answer that though the hazard of bleeding, as founded in this small probability, be hitherto inconsiderable, we go on increasing it till it will arrive to a more than moderate stature in practice. But, if it be urged that this opinion is not probable in any degree, for it contradicts experience, which continually shows bleeding to be salutary in many cases, then I appeal to Hippocrates, who furnishes me with an answer in the maxim *Experimentum fallax*. Indeed, excepting some few accidents in which experience seems to have declared in favour of bleeding, and those perhaps might have been better cured by different methods, it is in all other cases extremely doubtful. The authors who oppose bleeding were not unacquainted with experiments; so that these could not be so very manifest, since they did not convert them to the common opinion. Those who blindly follow Galen and recommend bleeding in all putrid fevers, do likewise defend this practice by experience; yet multitudes consider it as barbarity, and *Dr. Martinez* affirms, that artillery itself has not dispatched so many as this maxim. Experience being thus uncertain and inconstant, it is a very weak foundation to build upon for all alledge it in their favour. So fallacious, among other things, are most of the experimental observations we read in books, which physicians plead as authority for their practice. I conclude then, since such is the fallacy of experiments, those upon which bleeding is founded are insufficient to reject as improbable the opinon which absolutely condemns it. But, supposing the common opinion to be true, that bleeding is proper in various cases, which I will not deny, yet a difficulty remains as to time and quantity. On the subject of quantity there are so many and such opposite opinions, that they cannot but create

in the physician the utmost confusion and doubt, and the most manifest danger of a mistake. Indeed, I know not when the common Galenists succeed in bleeding, but this I know, that instances of their miscarriage are innumerable. It is their practice in general to bleed in a putrid fever, though it be evident from the best authors and the clearest dictates of reason that in many such cases bleeding is hurtful; for it impedes, suspends or retards the work of fermentation which should rather be forwarded that Nature might gain the discharge, which by the means of fermentation she is endeavouring at. A fever, says the incomparable Sydenham, and the most learned physicians of the present day agree with him, is the instrument by which Nature expels what aggrieves her. And it is universally known, that fevers have great power in preventing catarrhs, convulsions, attacks of the gout, and various other complaints. Notwithstanding all this our common doctors consider a fever as a dangerous enemy to be encountered only with bleeding and purging, that is, with fire and sword.

From bleeding let us proceed to purging, the other pillar of medicine, as Galen metaphorically calls it. All physicians unanimously acknowledge that purgatives have more or less a deleterious or malignant quality so that they always contain something noxious. The question is whether they are salutary in certain diseases, and at certain periods of the disease; for the mischief is infallible and the remedy doubtful. The patrons of this branch of medicine are persuaded that purgatives only expel from the body *vicious humors*, but for certain it is that they indiscriminately expel the useful and the useless, and dissolve, corrupt and precipitate, at once the nutritious juices with the excrementitious humors. It is likewise observable that all the humor, which on account of its incapacity of nutrition is called excrementitious, is not to be considered as useless in the body. Great part of it has its proper office, and administers to Nature for certain purposes. Thus, the bilious humor by stimulating the intestines, promotes the expulsion of the gross faeces, and the acid of the stomach serves to excite an appetite. So that purgatives are noxious various ways.

Cathartics are divided according to their effect upon the humors to which they are appropriated. Thus, some purge the choler, others the phlegm, etc. But this division, though generally received, is in the opinion of good authors, imaginary. They assure us that there is not a cathartic, but what purges promiscuously all kinds of humors,

that fall within the sphere of its operation, i. e. within the distance to which it can operate; and that the various colour of the excrements, according to the variety of the purgatives (which is the deception in this matter) proceeds from the tincture which this very medicine conveys to the humor.

I shall be told perhaps, that notwithstanding they absterge the useful along with the vicious humors, yet, as the retention of the latter is more dangerous than the discharge of the former, their use [the use of the purgatives] is evident. This is all that can be said in favour of them. To which I answer that a physician ought to be well assured that things are in this situation. But in what case can a physician be thus assured? In common diseases very seldom, if ever. It is matter of doubt among them whether in the beginning of a fever they can, or ought to, purge? Hippocrates, by his famous Aphorism, *Concocta medicari oportet*, forbids it, at least in case of a turgescence, and directs us to defer purgatives till the matter is concocted. But when the matter is concocted, Nature herself performs the work of secretion, so that purging becomes superfluous.

A turgescence of humors is considered as a case in the beginning of which purgatives are indispensable. But here likewise the learned *Martinez* disputes that necessity. For a turgescence is a restless and violent motion of the humor, which, whilst it threatens to fall upon a vital part, is endeavouring to discharge itself on all sides. This is observed in the beginning of the small-pox, and the best physicians do not prescribe purgatives at that season. But, abating of the danger which purgatives threaten, they have not the power attributed to them of absterging from the body the morbific matter.

When I confided most in them I had recourse to them in a disease I have long been, and still am, afflicted with. The general symptoms are heaviness of my limbs, a decay of appetite, and an oppression of the faculties of my mind, all which usually last two months, more or less. I was persuaded, and my physicians agreed in it, that the whole proceeded from a load of excrementitious humor, and, consequently, the remedy was a purgative. But I protest, that it never gave me the least relief, though for the space of six years, whenever this disorder befell me, I tried almost every kind of cathartic, varying both the kind and quantity; and I affirm the same of regimen. But my relief was this; all this apparatus of disease ended in an eruption of the size of a few grains in some part or other of the body. As I was meditating upon this repeated experi-

ence, it came into my thoughts that many of our diseases arise from a very small quantity of matter which is like a strong ferment, and by being concealed in some inaccessible recess of the body, or for some other reason which I cannot comprehend, is not subject to the operation of purgatives, but to Nature alone, which keeps her certain settled periods for her discharges, and defies all the power of pharmacy to compel her to hasten her course. And when her period arrives she dislodges that powerful, though seemingly, inconsiderable, enemy in a pustule or pimple. I continued in this opinion for several years, with some diffidence occasioned by the narrow compass of my knowledge. At last, in reading Ettmuller, I had the consolation of finding my notion patronized by that great writer. After mentioning (*Instit. Medic*, part 3, cap. 5) the prodigious havock which purgatives make in the human body, and how inefficacious they are, he says: "Sane fermenta morbosa minima illa non attingunt. Hinc subinde post repetitum licet purgantium usum nihilominus morbi contumaces persistunt." So that we come to this point, that purgatives, besides the mischief they occasion, pass by the morbific matter, through the branches; except when that matter is in the *primae Viae*, in which case there is no doubt of their utility. But the case itself is often doubtful; for it is frequently subject of dispute among physicians whether the morbific matter be in the *primae Viae* or not.

After purgatives, it is natural to say something of their companion and substitute a clyster, which physicians prescribe when they have no time for purges, to open the body, if it be not relaxed of itself, upon the supposition of which there is no hazard in the use of gentle clysters. But the supposition is not so clear, for Sydenham strictly forbids the use of those, and all other evacuations in all those fevers in which the fermentation is somewhat remiss, for they will retard it more. Besides this he condemns them in all fevers in general at the time of their declension to such a degree that he affirms of himself that he studies during the declension to keep the patient's body costive. And it is well known that in a method of treating fevers, the name of *Sydenham* alone will render an opinion probable. Let him therefore reconcile these measures, who labours to defend the coherence and safety of medical prescriptions.

In short, nothing is safe in medicine. One physician abhors a remedy which another passionatly admires. What miseries do not some impute to hellebore, and what virtues do not others ascribe to it! The same of antimony. Precious stones were once the prin-

cipal requisites in a dispensary; now they are rejected by the best authors, not merely as useless, but as harmful. What shall we say of the infinite number of cordials which are so only in name? The virtue of *Lapis Bezoar*, which is part of every cordial prescription, is a mere fable. Most physicians, and all apothecaries, approve of those medicines that are most costly and rare. The same is true of exotic medicines, and those that come from far countries. Physicians find their account in them by displaying their knowledge, and druggists by increasing their fortune.

Duncan, a doctor of Montpellier, takes notice that some famous French physician prescribed coffee universally to all his patients. Yet the majority are now of the opinion that not great matters are to be expected in the medicinal way from either tea or coffee. Nay the most noted specifics are not free from exceptions. It is well known that many are at this time enemies to the bark, and, which is yet more extraordinary, Fernelius declaims against mercury, though without reason, since all the world is a witness of the singular power of that noble medicine.

The power of fashion is as prevalent in physic as in dress. One medicine no sooner gains credit than another loses it. All medicines at their first composition were most famous and celebrated. Hence those pompous epithets which they assume as their surnames, Aqua Angelica, the Golden Julep, etc. And what shall we say of the virtues falsely attributed to many medicines? The authority of *Valesius* may suffice on this head, who affirms, that physicians speak with less truth and certainty on no subject than this.

To conclude this essay on the practice of physic, I beg leave to add one important piece of advice, that the best and choicest medicines are hurtful in large quantities.

CARE OF THE AGED IN ENGLAND

From Mediaeval Times to the End of the 16th Century

SONA ROSA BURSTEIN *

To the revered and beloved veteran of medical history, Max Neuburger, for his 80th birthday, December 8, 1948.

Planning for Old Age in Feudal Times

Historians writing of problems of dependency by reason of age or enfeeblement are apt to write as though such problems did not exist in feudal conditions. "Under feudalism there could, at least in theory, be no uncared-for distress. The people who today would be in the greatest economic danger were, in the Middle Ages, presumably protected by their masters from the most acute suffering. . . . Insurance against unemployment, sickness, old age was theirs in the protection of their liege lords." [1] This presupposes either a graduation and lightening of occupations for those getting on in years or else a recognized retirement, with maintenance, from activity in the service of the lord.

Nevertheless, a study of some of the manor court rolls of feudal times reveals some interesting evidence of anxious preparation and determined planning for old age security on the part of the villeins or unfree peasant farmers. In court rolls of the thirteenth century, for example, we find numerous family agreements by which the holder of the family tenement agrees to make over the holding to his son in return for support for himself and his wife in old age, the details and nature of such support being set forth with the greatest particularity.

The rolls of the Manor of Halesowen in Worcestershire are especially rich in such cases. In 1280 we find one William transferring his holding to his son Nicholas who is to support him in his old age, and if Nicholas finds himself unable to do so, he is to have only half the holding and give to the lord a fine of twenty shillings to be paid in four instalments.[2]

The "agreement made between Agnes, widow of Thomas Brid (or Bird) of Ridgacre and Thomas her elder son, dated Thursday 23 October

* Wellcome Historical Medical Museum, London.

[1] De Schweinitz, K., *England's Road to Social Security*, Oxford, 1943, p. 2.

[2] Halesowen Court Rolls, ed. Amphlett, J., Hamilton, S. G., Wilson, R. A.: *Court Rolls of the Manor of Halesowen* (Worcestershire Histor. Soc.), Oxford, 1910-1933, p. 152.

1281" is very instructive. Agnes gives up to Thomas all the land she held in the vill and other places on condition that he will, so long as she lives, honourably and fully provide for her as follows: at Michaelmas and Christmas a quarter of oats, a quarter of wheat and a bushel of peas; at Midsummer and on Good Friday, the wheat and the oats without the peas; and if he had not the grain ready at the proper time, he was to give her the proportionate price of the best grain on the market. On every All Saints' Day she was to have five cart-loads of coal. All these things he was to bring to her door or send them by one of his household. In addition she was to have "five shillings of good money" every Pentecost, and he was to build at his own expense a suitable home for his mother to live in, "and he will answer to the lord for all customs and services known to belong to the land." [3]

In the Court Rolls of Dunmow, Essex, for 1380, we read of another such agreement between a widow and her son, ". . . that the said John will find for the said Petronilla, for the said Petronilla's lifetime, reasonable victuals in food and drink, as befit such a woman, and moreover the said Petronilla will have a room, with a wardrobe . . . to dwell therein during the said Petronilla's lifetime, and one cow, four sheep and a pig . . . for her clothing and footwear." [4]

The essentials insisted on when people handed over their tenements and bargained for their keep, form a fairly regular pattern: (a) *food and drink*, often with precise specification as to kind, quality and frequency; (b) *clothing*, with exact garments entered into the covenant; (c) *housing*, i. e. a cottage or room in which to dwell for the rest of their lives. Sometimes the old people kept back a couple of acres of the holding for their own supply, or retained the means of providing the clothing, as Petronilla's "one cow, four sheep and a pig."

Even the future possible dangers of too close symbiosis are not overlooked in the provisions, as in the agreement of Elyas of Brickenden with his son John for himself and Christiana his wife. "And if it chance (which God forbid) that quarrels and discords arise in time to come between the parties, so that they cannot dwell together peaceably in one house, the aforesaid John will find the same Elyas and Christiana, or for whichever one of them survives the other, a house in his courtyard, with a curtilage, where they can honourably dwell. . . ." [5]

While the commonest form of these settlements is that of a father or

[3] *Ibid.*, p. 166.
[4] Homans, G. C., *English Villagers of the Thirteenth Century*, London, 1942.
[5] British Museum, *Additional Rolls* 39597, M. 16.

mother handing over a holding to an heir, bargaining at the same time for sustenance in old age, similar covenants were made in other situations. A childless old man who was poor and old and unable to keep his holding, might turn over his land to another for his keep. More rarely an old man makes an arrangement with the lord. Thus Richard de Putteway surrenders his tenement in exchange for daily bread, weekly beer, the right of meals with the free servants of the Abbey, and five shillings to clothe himself.[6] Elsewhere, a widow surrenders her tenement to the Abbot of Wardon who gives her "in regard of charity" a messuage and two pairs of shoes at Christmas.[7]

All these transactions took place before the hall mote and were entered into its rolls, so that they might be enforced there. Furthermore as the holding was not legally the possession of the holder, who was only a life tenant, the lord took a fine to himself at every change of tenancy.[8]

Elsewhere in the court rolls, we find evidence of leniency on grounds of poverty, infirmity or age. A number of men are forgiven their fine "for not coming at the lord's command and not attending the tourn," because they are poor.[9] At Sourby in 1313, "Richard sues Elias, son of Ivo and Robert de Saltonstall for debt, and does not prosecute the suit. His fine is pardoned because he is blind and old."[10]

"Impotent Poor" in the Fourteenth Century

By the middle of the fourteenth century, with feudalism nearing its end and the move from servile to hired labour and, above all, the migration from rural to urban life well advanced, problems of unemployed and unemployable begin to arise. The ranks of the latter group would be considerably enlarged by soldiers turned adrift by their lords when sick, maimed or aged.[11] The statutes passed by Parliament during the century and a half following the Black Death, all repressive and punitive, directed at control of wages, prices and labour supply rather than relief of destitution, have some special points of interest to historical gerontology.

The Statute of Labourers of 1349 enjoined compulsory service on all

[6] Homans, G. C., *loc. cit.* Halesowen Court Rolls, p. 336.

[7] Bennett, H. S., *Life on the English Manor* (*1150-1400*), London, 1937, pp. 253-4.

[8] Coulton, G. C., *Mediaeval Panorama*, Cambridge, 1943, p. 77.

[9] Wakefield Court Rolls, ed. Baildon, W. P. and Lister, J., *Court Rolls of the Manor of Wakefield* (Yorkshire Archaeol. Soc., Record Series), Leeds etc., 1901-1930, pp. 124, 137, 163, 165.

[10] *Ibid.*, p. 6.

[11] Gairdner, J., *Letters and Papers Illustrating the Reigns of Richard III and Henry VII.* (Rolls Series 24.)

"free or bond, able in body and within the age of three-score years," with a subsequent paragraph prohibiting alms-giving. A statute of 1388 enacted that "beggars impotent to serve shall abide in the cities and towns where they be dwelling" at the time of the act. Under Henry VII (1495), the punishment for vagrancy was mitigated for pregnant women and the sick; in 1504, "persons being impotent and above the age of sixty years" were added to those to receive special consideration.

Of significance to gerontology and the history of social medicine generally are: (a) the first indications of reluctant recognition that unemployment and beggary might be caused by genuine "impotence" to work, through weakness or old age; (b) the setting of an age-line of disability at sixty years; (c) the shifting of responsibility by the legislators to local charity—whether of parish clergy, monasteries, hospitals, gilds or private persons mattered not so long as the impotent poor remained where they were at the passing of the act.[12]

Parents and Children in the Fifteenth Century

For the well-to-do class, the later Middle Ages seem to have been the heyday of parents in particular and elders in general. As the serf to the lord, so the child to the parent was a chattel. The Paston Letters and other surviving correspondence bear evidence to the repressive influences on young people and the severity with which absolute obedience was demanded. About the middle of the fifteenth century, the twenty-year-old Elizabeth is "beaten once in the week or twice, and sometimes twice a day, and her head broken in two or three places" by her mother, Agnes Pasten, for her reluctance to marry the fifty-year-old widower, Scrope.[13]

Didactic literature of the time is full of injunctions and maxims for the respectful and repressed bearing of youth to its elders.[14] In one instance, the poetic monitor at least does imply that youthful discipline is not an end in itself but may bear reward in later life:

> "Whoso in youthe no vertu usith,
> In age all honour him refusith." [15]

The deference paid to parents in England even by grown men and women called forth foreign comment: "The severity of parents at this time was so great that children perfectly loathed the sight of them; nor

[12] Homans, G. C., *loc. cit.* Bennett, H. S., *loc. cit.*
[13] *The Paston Letters* (ed. J. Gairdner, 1904), no. 71.
[14] Cf. *Early English Meals and Manners* (ed. E. J. Furnivall, 1868).
[15] *Ibid.*, p. 219 (c. 1450).

did their discipline relax as they grew older, for daughters, grown women, and sons, gentlemen of thirty and forty years old, might not sit in their presence without leave, but stood like mutes bareheaded before them." [16]

It is not perhaps surprising that we find evidence of rebellion among this generation of children in later years. The *Early Chancery Proceedings* contain a number of lawsuits between parents and children, while Sir Robert Plumpton, planning to retire and resign the management of his household to his son William, is charged for board for himself and his wife: "First, it is agreed that the said Will Plompton shall have ordering and charge of all the household and goods thereto longing, and his said father and my Lady his wife, to take some ease and rest, and to be at board with the said William at the proper costs and charges of the said Will." [17] Elsewhere in the Plumpton letters we read of another Robert de Plumpton lodging and boarding his widowed mother and her children at similar terms.[18]

Housing the Impotent Poor: 12th to 16th Centuries

The story of the housing of infirm and aged in hospital, *Maison Dieu*, almshouse or bedehouse reflects much of contemporary social history and changes in economic pattern. Of the foundations now nearly all known as almshouses [18a] in England and given over to housing the old, the earliest were for pilgrims and other wayfarers and the sick. The original inmates of St. Nicholas', Salisbury, founded in 1214, are described as passengers (*transeuntes*) and as sick and infirm (*egroti et infirmi*).[19] In 1136, Bishop Henry de Blois founded St. Cross Hospital, Winchester, to support entirely "thirteen poor men, feeble and so reduced in strength that they can hardly or with difficulty support themselves without another's aid." Nevertheless, any Brother, should he recover his strength, was "to be sent abroad with honour and reverence, and another put in his place." [20] A number of these temporary homes, however, became permanent retreats, while many of the almshouses built during the twelfth and thirteenth centuries were intended from their foundation for life-pensioners.

Significantly, from the beginning of the fourteenth century into the

[16] Sneyd, C. A., *The Italian Relation of England*, ed. 1847.
[17] *The Plumpton Correspondence* (ed. Stapleton, 1839), pp. cxxiii-cxxiv.
[18] *Ibid.*, p. xxvii.
[18a] "Almshouses" in England imply groups of small, individual dwellings—not public institutional homes.
[19] Clay, R. M., *The Mediaeval Hospitals of England*, London, 1909, p. 5.
[20] Warren, W. T., *St. Cross Hospital*, Winchester, 1899.

fifteenth begin to arise retreats and homes for poor clergy [21] and "decayed" gentlefolk whom one benefactor described as "most sensible of want." The "New Almshouse of Noble Poverty" (*Nova Domus Eleemosynaria Nobilis Paupertatis*) designed by Cardinal Beaufort in 1446 to be added to the original foundation of St. Cross, was for people who "once had everything handsome about them," but had "had losses."

It was in the sixteenth century, which, along with its golden age of discovery and revival of letters, brought also its throngs of beggars and flood of social distress, that almshouses grew up thick and fast. Whether or not they were impelled by the motive of good works as a means of grace, many of the foundations of this period show signs of thought beyond mere housing; most of the bequests include maintenance, food and clothing, many attendance also. At Coventry, the bequest for Bond's Hospital (1506) stipulated that a woman be elected on the foundation and have residence there, in order to dress the men's meat.[22] At Higham Ferrers Bede House (1423), Northamptonshire, it was directed "that every man shall buy his meat upon the Saturday . . . and deliver it to the woman, and she shall ask them which they will have against Sunday, and the rest she shall powder up against Wednesday." [23] Among the Bede House documents are statutes and regulations regarding the toilet, eating, bathing and laundry arrangements of the inmates. Richard Brock, the testator of the Okehampton almshouses (1588), stipulated that they should be built with chimneys.[24]

There are indications of a similar but less ambitious method of housing the poor; as thus from the records of Staplegrove in Somerset: "Roger Smyth kepeth William Harvy, impot." [25]

But in this time of increasing cost and decreasing means of living, the foundations of voluntary charity were still hopelessly inadequate for the misery of the time. Philip Stubbes, writing in 1583, complained that the hospitals, lazar houses and almshouses in some towns, cities and other places, were "not one hundred part of those that want. For the supplie whereof would God there might be in everie parish an almshouse erected, that the Poore . . . might be maintained, helped and relieved." [26]

[21] Clay, R. M., *loc. cit.*, p. 23.
[22] Gray, B. K., *History of English Philanthropy*, London, 1905, p. 14.
[23] Heath, S., *Old English Houses of Alms*, London, 1910, p. 53. Clay, R. M., *loc. cit.*, p. 169.
[24] Gray, B. K., *loc. cit.*, p. 14.
[25] *Ibid.*, p. 15.
[26] Stubbes, Philip, *Anatomie of Abuses*, 1583.

Old Age in the 16th Century: Poor Relief; Occupations

The special economic conditions of the sixteenth century brought the problems of old age distress to a peak. In addition to the general causes of poverty, the dissolution of religious houses and fraternities left without any means of subsistence large numbers of aged and infirm people whom they had supported.

Writing in 1516, in *Utopia*, of the sufferings of the dispossessed farmers, Thomas More describes the working-man's complete lack of economic security: " . . . these silly poor wretches be presently tormented with barren and unfruitful labour. And the remembrance of their poor, indigent and barren old age killeth them up. For their daily wage is so little, it will not suffice for the same day, much less it yieldeth any overplus, that may be daily laid up for the relief of old age." [27]

In remedial tracts and pamphlets of this century, we find some interesting classifications of " impotent poore." In *Provision for the Poore*" (1597) Henry Arth classifies as follows: (1) aged persons past their work; (2) lamed persons unable to work; (3) little infants without parents; (4) poor sick persons during their weakness.[28] Elsewhere the same author, classifying the able-bodied poor, includes " such as fall into decay in their workes by reason of their yeares, weaknesse and infirmities." Thus " impotent " includes aged, chronic sick and temporarily ill.

The Elizabethan Poor Law of 1597-8 introduced a compulsory poor rate " for and towards the necessary relief of the lame, impotent, blind and old." Like so many institutions originated by voluntary charity, the almshouse was now confirmed as part of the relief programme; and finally a new principle was introduced, namely the liability of " parents or children of every poor, old, blind, lame or impotent person " for that person's support. The Act of 1601, generally regarded as the first Poor Law, was a final restatement of the system of relief for the poor, almost the only new thing in it being the extension of liability for support to grandparents.[29]

The first organized efforts at " setting the poor on work " were by now well under way. By the Statute of 1567, overseers had been directed to provide " a competent store and stock of wool, hemp, flax, iron or other stuff " for this purpose. The directions are not confined to the healthy poor and we seem to find the first hints at organized " light work for the

[27] More, Thomas, *Utopia* (ed. 1922), p. 161.
[28] *Tudor Economic Documents* (ed. Tawney and Power), III, pp. 445-6.
[29] De Schweinitz, K., *loc. cit.*

disabled." Many of the documents of the second half of the sixteenth century contain the idea of providing work for the sick and infirm. The Petition of the Citizens of London to the Privy Council, 1552 [30] outlines its plan ". . . to take up out of the streets the miserable aged, sore and sick persons . . . and the same to harbour and by physick and surgery to cure and make whole" and then to make "some general provisions of work" for "this miserable sort." Thomas Firmin's experimental workhouse, a century later, was to offer employment to "our ancient people," some nearly blind, that they might earn their keep.[31]

From Holinshed's *Chronicle* we get a glimpse of the other side of the medal, in a picture of the ladies of Elizabeth's court: "Besides these things I could in like sort set down the waies and meanes our ancient ladies of the court do shun and avoid idlenesse, some of them exercising their fingers with the needle, others in cauleworke, diverse in spinning of silks, some in continuall reading either of holie scriptures or histories of our owne or forren nations and diverse in writing volumes of their owne or translating of other mens into our Englishe and Latin toong. . . ." Further we learn that "manie of the eldest sort also are skilful in surgerie and distillation of waters." [32]

History and Gerontology

There is almost complete dearth of any systematic investigation of old age in history. An exception is Zeman's survey, comprised in a long series of papers, of attitudes to and treatment of old age from earliest to modern times.[33] In general, the study of the historical aspects of old age is treated as a leisure relaxation and even the *Journal of Gerontology* relegates its historical contributions to the section headed, "Browsing through the Ages." Something more than browsing is necessary if we hope to find, for instance, cause and cure for the constantly recurring index-entry in the social histories, "*Old Age*: see *Poor Relief*."

History has not yet come into its own in the new discipline of gerontology. Stieglitz has time and again urged the need for a comprehensive programme of all the physical, psychological, social and economic aspects of ageing,[34] but he has not included history. Yet, as lately as 1945 he

[30] *Tudor Economic Documents*, II, pp. 307-8.

[31] De Schweinitz, K., *loc. cit.*, p. 52. Firmin, Thomas, *Some Proposals for the Imployment of the Poor*, 1601. Gray, B. K., *loc. cit.*

[32] Harrison, W. (1577), in *Holinshed's Chronicle* (ed. 1586), vol. I, p. 196.

[33] Zeman, F. D., "Life's Later Years," in *J. Mt. Sinai Hospital*, *11*, 300, 330; *12*, 783, 833, 890, 939; *13*, 241 (1945-1947).

[34] Stieglitz, E. J., *The Second Forty Years*, Philadelphia, 1946, pp. 18 ff.; artt. in *J. of Gerontology*, *passim*; etc.

could make the challenging statement that " society as a whole looks upon aging as either a catastrophe or a sin." [35] While past and present evidence can be found to support this indictment, it can never be righted only by palliatives and remedies for modern ills. The true causes, and the indications for cure, are likely to be found deep-rooted in the history of reciprocal human relations.

[35] *Idem*, in *Mental Disorders of Later Life* (ed. O. J. Kaplan, 1945), p. 413.

JACME D'AGRAMONT AND THE FIRST OF THE PLAGUE TRACTATES

C.-E. A. WINSLOW AND M. L. DURAN-REYNALS*

The Black Death which began its course in Europe in the middle of the Fourteenth Century was the most terrible epidemic ever immortalized in the form of detailed written records. It wiped out a population estimated in various communities by local observers at from one-fourth to nine-tenths of the inhabitants. It struck a shattering blow at the entire social and economic framework of the Middle Ages; and cleared the way for the coming of the Renaissance. A. L. Maycock (1) has said that "the year 1348 marks the nearest approach to a definite break in the continuity of history that has ever occurred."

One of the by-products of this catastrophe was the production, in Spain and Italy and France and Germany and other countries, of a remarkable series of pamphlets prepared to acquaint the general public with what was known, or surmised, with regard to the cause of the epidemic and the symptoms, treatment and prevention of the disease. These "plague tractates," as they are called in English, ("Pestschriften" in German) added little in the way of new theoretical knowledge to the writings of Galen, Rhazes, Avicenna and other earlier writers. They do, however, give us a remarkably clear picture of the knowledge then available with regard to the causation and control of epidemic disease; and they are of particular significance because these documents (many of them written in the vernacular) represent the first large-scale effort at popular health instruction in history.

Sudhoff (2) lists a total of 281 plague tractates, of which 77 were written before 1400 and about 20 within five years of the outbreak of the disease in Southern Europe. He has given a full discussion with many verbatim extracts of 141 of the tractates prior to 1500 (including 77 from Italy, 21 from France, 9 from Spain, 9 from England and 7 from Switzerland) in an exhaustive series of articles in the *Archiv für Geschichte der Medizin* (2) from Volume IV (1910-11) to Volume XVII (1925). The last of these articles carries a full index to the entire series.

Campbell (3) has made a valuable analysis of 16 of the earliest of these tractates, all dating from the middle of the Fourteenth Century.

* Contribution from the Historical Library of the Yale School of Medicine. An English translation by M. L. Duran-Reynals and C.-E. A. Winslow of the Plague Tract by Jacme d'Agramont will appear in the *Bulletin* at some later date.

The pioneer document of this remarkable series—with which we are concerned in the present discussion—was the work of a physician at Lerida in Catalonia, Jacme d'Agramont and dates from April 24, 1348. The text of this tractate was discovered in the parochial archives of Verdú and was printed in Catalan in 1910 by J. M. Roca and E. Arderiu (4). Its importance was recognized by Arnold C. Klebs; and when Dr. Klebs' library (which was left to the Historical Library of the Yale School of Medicine) arrived at New Haven a year ago, the folder on Jacme d'Agramont proved of absorbing interest to us.

Klebs' first reference to this tractate appears in the *Remèdes contre la Peste* by Klebs and Droz in 1925 (5); but at that time he had not seen the document. In the same year, Sudhoff (6) refers to it as "probably the oldest plague tractate by any Spanish author, even, as it would appear, the oldest written treatment of the plague of any kind which the 'Black Death' brought to light."

It may be noted that at least four other plague tracts have been found which were written in the year 1348. Gentile da Foligno wrote one of these in Perugia before his death from the disease in June, 1348, and John of Penna prepared his in Naples during the same year. Both were written during the course of the epidemic, and there is no evidence that they antedated the Jacme tract. The famous report to the Faculty of Medicine of Paris was dated in October, 1348 and the Consilium of Master Albert was of the same year.

Sudhoff says that he first learned of the Jacme tract from Klebs just as his own article was going to press. He speaks of it (7) as a hand-written document in the archives of Verdú; and he prints 30 lines of text, which he cites as the beginning of the tract. He does not say he has seen the manuscript or the 1910 printed pamphlet and is apparently relying on Klebs for his data. The passage cited by Sudhoff is, however, not only not the beginning of Agramont's tract but actually starts with half a word, that is with 'faccio' which is the last half of the word 'putre (faccio)' since his quotation begins near the end of the following sentence: "However it happens sometimes that a wind rises and it reigns strongly for some days and it takes all that pestilence and putre (faction to another region.)" Thus Sudhoff begins with the words quoted in parentheses above so that the first passage in his quotation reads, when translated, as follows: "Faction to another region and to the first it brings from the other region pure air and clean because Galen states that by the things dead in Ethiopia, because in the times when there is pestilence in Sicily or in Sardinia the wind of 'midday' is very dangerous to Catalonia." This pas-

sage is completely unintelligible, not only because it begins with half a word and the end of a sentence but also because there is a whole sentence missing from the context, as can be seen from the 1910 copy of Agramont's tract where the whole passage reads as follows: "It sometimes happens that a wind rises and reigns strongly for some days and carries pestilence and putrefaction to another region; whereas where the pestilence once prevailed it brings pure and clean air from other localities. Thus, Galen states that from dead bodies in Ethiopia pestilence and mortality came to Greece. This is why when there is pestilence in Sicily or in Sardinia the wind of 'midday' is very dangerous to Catalonia."

From here on, Sudhoff's quotation is exactly like our copy with differences in punctuation and spelling. Some of the latter are quite baffling and seem to indicate a misreading of the original manuscript, as for instance the word 'bolsa' which could easily be taken as 'purse' but which in the printed Catalan copy is 'Tolsa' for the city of Toulouse (in modern catalan, Tolosa) as could have been gathered by the context where it says that: "If on the contrary the pestilence should be in Guascuynna or in Tolsa or in France the Northern wind would then be very dangerous to us." Without our copy we would have been unable to understand several sentences in Sudhoff's quotation. By comparing the two texts, it is apparent that the Sudhoff extract is a highly garbled version of the original Catalan text.

The first extensive printed discussion of the tractate was presented by Klebs in 1927 (8). He quotes D'Irsay, who had sought for first hand data in Lerida, as able to obtain very little information about Jacme. The 1910 pamphlet states that the tractate reproduced an address delivered before the City Council of Lerida, by "Master Jacme d'Agramont, Master in Arts and Medicine in the last (or perhaps "third") year of his lectureship." Jacme describes himself as "Of Lerida"; and Agramont, the town indicated as his place of family origin, is only 20 kilometers north of Verdú.

Arderiu and Roca (in a ms. note in the Klebs folder) cite several appeals for help made to the Council of Lerida in 1349 and 1350 by "the wife of Master Jacme d'Agramont" which would suggest that her husband had died in 1349. If he had been living, the petitions would presumably be in his own name.

A description by Arderiu of the actual discovery of the document (also in ms. in the Klebs folder) is so fascinating that we quote a portion of it as follows:

Forgive me, kind reader, if I tell you how a ms. was found, which is the work of Jacme d'Agramont entitled: Regimen. . . .

In the parochial archives of Verdú lay the portrait [1] of Master Jacme mixed up among other papers, all tied up in one volume, the second of a series; when an outing organized by the Center of Lerida took us there in a hot day of the month of June. Turning the pages of those volumes, no great effort was required for fixing our attention on this little opus, which stood out from the artificial ensemble as if having consciousness of its own worth. A kind of spiritual compenetration with that citizen of Lerida of long ago, a strong law of intuition of the merit of those yellowish pages, made me believe that the old treatise said, in fear of being left ignored: "I am here." "I see it and you won't get away," I also felt that I answered. I am sure it is still there, in the archives of Verdú, since not everywhere is it as it was in Golmes, where on a certain Sunday I saw some paintings and on the following Sunday they had flown away in the shape of merchandise for the dealers.

The whole work of Master Jacme takes up 14 leaves unbound, written in pages of two columns of 29 to 34 lines each, with the exception of the last page where, carefully counted, the number of lines is less than one-third.

If you, my friend the reader, wish to follow me as did my countryman and professor of Zamora, Rafael Gras d'Esteve, who took photographs of three of the pages, and besides being great company was a most reliable assistant for the task, you will see that the pages of the ms. measure 0.295 by 0.215 m. in all, and that the writing covers 0.215 m. in length by 0.075 in width for each column, the rest being left for the margins. If moreover you want to look at it against the light you will see most clearly a heraldic fleur-de-lys, the water-mark of the paper. You will also observe, if perchance you care to do it, that the copyist left blank spaces at the beginning of the chapters, undoubtedly for the purpose of drawing or painting the initial capital letters which are even sketched very faintly, and so are still waiting, in saintly peace, for the expert hand that will trace them.

The original book was written by Jacme d'Agramont in the year 1348, as can be clearly read at the end of the ms., but as to the copy we cannot tell whether it was written in the same year or not. Still less can we say about the person of the copyist or about how the copy got to be in Verdú. As a curiosity only, fitting the place and to a certain point the time, I would like to mention that some seven years before 1348 if memory serves me, the Rector of Verdú had obtained his "licentiature" in Lerida and also the privilege of taking free into Verdú some carloads of wine in order to help with the expenses of his degree; [2] I will also mention that in the last page of the ms. one may read with some difficulty: "Factum . . . CCCLXXXVII" which may very well be the date of the copy since one could easily suppose that, pestilences being then quite frequent, the teachings in the book were used for many years.

[1] This word "portrait" is the literal translation of the Catalan text. We suspect it may be metaphorical, in the sense that the ms. portrayed its author.

[2] Klebs suggests, on the basis of this statement, that Jacme may, himself, have been the priest (in spite of his leaving a widow). We think Arderiu was merely suggesting that the doctor-priest of Verdú may have been the copyist.

However this may be, let us not worry about it, because the writing, by its character, is of the fourteenth century, which is all we need for the time being. Another detail we shall mention is that Jacme d'Agramont was already dead when the copy was made, as shown by the last words: "Ffo finished . . . by Master Jacme D'Agramont in the last year of his lectureship" and by the fact that the author was to my understanding already buried by July of the year 1349, as will be shown, if not by definite and conclusive evidence, at least by good indications.

You may wonder perhaps at my readiness to qualify the ms. in the parochial archives of Verdú as a copy of an earlier original. This appears to be a certitude from errors in words or letters, from the occasional lack of some word which leaves the meaning up in the air, from certain changes due to misunderstandings and, above all, from what is said at the end where he who speaks is not, as in the beginning, Master Jacme, but another writer who tells us that Master Jacme composed the treatise in the last year of his lectureship.

This tractate was prepared before the epidemic had actually reached Catalonia but when it was knocking at the doors. Plague began to spread from Constantinople to Egypt, Greece and other adjacent areas in the early part of 1348. It reached Venice, Florence and other parts of northern Italy and was probably in Avignon by April and in Valencia and Barcelona by early May.

The importance of this contribution of Jacme d'Agramont has been overshadowed and some bibliographical confusion created by the fact that one of the most influential of the later plague tractates was written by a physician of similar name. Johannes Jacobi (also written Jean Jasme or Jehan Jacme) was papal physician and a member of the Faculty of Medicine at Montpellier. His name first appears on the register of the Faculty in 1364 (5), in connection with his appointment to the important post of Chancellor, which was appealed to the Pope on the ground that a quorum of the Faculty had not been present when his name was recommended. Jacobi, however, was ultimately sustained in his claim, apparently through his personal influence in the highest clerical and political circles. He appears to have held this post until his death in 1384. In 1357, he prepared a tractate in French verse, "La Regime de l'Epidemie et Remedde contre Icelle by Jean Jasme (Johannes Jacobi)" which has been reproduced (largely in facsimile) by Klebs and Droz (5).

This poem was read before the clergy of the diocese of Montpellier. Two other versions of this tract, one in French prose and the other in Latin prose were later prepared by Jacobi. The French prose version is reproduced by Klebs and Droz and the Latin version by Sudhoff (9) who gives it the date of 1373 (after Jacobi's appointment to the Faculty of Medicine.)

The two prose texts correspond rather closely; but the earlier version is much less impressive. It is not a literary performance of high merit, shows little evidence of erudition and no tendency to philosophical speculation. In the second verse, the author dismisses with one stroke the learning of the past by saying that the ' ancients ' have said little about this malady, which visited few of them, and so they all had a joyous and long life; and with this he disposes of Hippocrates, Galen, Avicenna and all the rest. The next twenty-seven verses deal in a pell-mell fashion with the causes of the epidemic, mode of transmission, its symptoms and with sanitary precepts. As to the causes, the author states without qualification that it can come from the soil, the sky, bad air, unburied bodies and corrupt humors; as to the mode of transmission he emphasizes contagion from the sick to the well; as to the symptoms he limits himself to the mention of fever and vague references to abscesses, and it is only concerning the sanitary precepts that he goes into specific and most pertinent detail, since he puts great emphasis on cleanliness. Keep your hands and face clean and also your clothes and your house, he entreats; keep away from crowds, move away when the epidemic comes, keep your thoughts cheerful and strong. After this come no less than twenty-eight verses devoted to the subject of diet; a staggering catalogue of edibles from fish to fowl, from fruit to herb; a glorious hymn to the art of eating where the ' lait d'amandes ' takes up a whole stanza and where the author shows a profound knowledge of cookery by the easy way with which he handles such problems as seasoning, jellies, sauces and soups. The diet to follow is hard to fathom but we learn that ducklings, pigeons, swallows, partridges, pheasants and other little nourishing birds plus mutton, lamb, fat kid, rabbit and fat veal, preferably roasted and with the proper sauce, are good in times of the epidemic. On the subject of drinking he sensibly recommends wine, though clear and subtle, but it is actually the subject of water that lights in him the only sparkle of poetry to be found in the whole dismal text for, with a lovely turn of phrase, he recommends water:

de fontaine clere et iolie
ou de cler pur et net rivage
qui aient par roche passaige

and there follows a remarkable admonition to the effect that water from wells or low lying springs should be boiled before drinking.

After this long dissertation on diet come thirty-six more verses with more scattered advice on food and eventually the author deals with the treatment, which includes first bleeding, though, let it be said to his ever-

lasting glory, that he forbids the bleeding of pregnant women, the too-old and the too-young and the sick in belly. Three prescriptions in Latin are interspersed with these last verses plus sundry recommendations regarding purging, the theriac and the two great favorites, vinegar and the pomegranate. The last lines are undoubtedly the wisest for the author ends by advising prayer to the Lord for deliverance from the epidemic.

The two later versions of this Montpellier tract are far more solid works; indeed they are so superior to the poem as to make one wonder whether they can all be by the same author.

The Latin text of Jacobi, as indicated by Sudhoff (10), in an exhaustive discussion of this document, was widely copied. As late as 1461 a tractate published under the name of Canutus, Bishop of Arusiens (Vesteras) in Dacia was shown by Sudhoff to be textually identical with the 1373 text of Jacobi. Klebs and Droz (5) cite, in their list of plague tracts, six reprintings of Jacobi's tract as such and 25 reprintings of the pirated Canutus. Clearly, this was one of the most influential of all of the early plague tractates.

The notes in Dr. Klebs' folder indicate that he intended to contribute a paper on " Jacme d'Agramont, Johan Jacme metge del Rey D'Arago and Joannes Jacobi of Montpellier " before the Tenth International Congress of the History of Medicine at Madrid at 1935. Neither in the list of communications to the Congress nor in the list of Klebs' own writings is there any reference to such communication; and it was apparently never completed. A few sheets in Dr. Klebs' folder appear to be preliminary notes considered for the purpose. In these notes Klebs concludes that, since Jacme d'Agramont apparently died in 1349 and Johannes Jacobi did not appear at Montpellier till about 1360, " Jacme d'Agramont cannot be the same person as Jacme of Montpellier." He adds the following very interesting passage.

A " Mestre Joan Jacme " figures as the Catalan translator of " Libre de la figura del Uye " by the Arab Alcoati, discovered in the Biblioteca Capitular de la Seu de Saragossa and published by Leuis Deztany with historical notes by Josep M. Simon de Guilleuma (Barcelona, 1933, kindly put at my disposal by Laboratorios del Norte de España). Dr. Simon de Guilleuma does not hesitate to identify this Jacme, translator from the Arabic, with the Chancellor of Montpellier University. He thinks he cannot have been a Frenchman because in the Secretarium which he wrote at the request of King Charles in 1378 he speaks of him as " rex francorum," although Montpellier had been ceded to the French Crown in 1350 by Pere III of Catalonia. Possibly he may have been the son of another famous physician of Lerida " Mestre Jacme," who was called in consultation to Calatayud by King

Jaime II in 1304.[3] This is an interesting and plausible conjecture for which the strict proof however is still to be given. If it is correct, Jacme d'Agramont may well become the father of Johannes Jacobi of Montpellier, and in a sense also of that "Regimen pestilentiae" which for about two hundred years gave most popular advice to many generations, the minority of which were aware that its wisdom came from Catalonia.

A similar suggestion had come from Sudhoff ten years earlier. He says "One may also play with the thought that he (Johannes Jacobi) may have been of Catalonian origin and that the Jacme d'Agramont, author of the first Spanish plague tract of April 24, 1348, may have been his father."

If indeed Johannes Jacobi were the son of Jacme d'Agramont, it is clear that he did not plagiarize from his parent, at least in his initial effort of 1357.[4]

After this digression to consider the relations of the two Jacmes, we may return to the original tract of Jacme d'Agramont. As has been indicated, above, this is a document of great interest in its own right as well as in point of priority.

The Jacme tract is so clear and orderly in its presentation that it is easy to review; and, indeed, in studying many of the plague tractates and comparing them with modern scientific papers, one is impelled to wish that the wealth of scientific knowledge of the twentieth century were more often coupled with the logical clarity of the Scholasticism of the fourteenth.

The popular health education appeal of the plague tracts is formulated at the outset, in this earliest of the series. Master James says:

[3] The evidence that "Mestre Jacme" attended King James in 1304 and that this "Mestre Jacme" is the same as the author of the Verdu tract has not been found in Klebs' notes. Unless his life span was much longer than was usual in the fourteenth century a man who died in 1349 must have been pretty young to be called to a royal bedside in 1304.

[4] It is of some interest to note that in 1349, Abraham b. David Caslari, a Hebrew physician of Catalonia prepared a treatise on pestilential and other fevers. This tract was published with a Dutch translation by H. Pinkhof of Amsterdam in 1891 (Abraham Kashlari over Pestachtige Koortsen). This Dutch pamphlet has been courteously loaned to us by Dr. Harry Friedenwald of Baltimore and read for us by Dr. A. C. Moulyn of the Yale School of Medicine. It differs as widely from the Jacme tract as any two documents on the same subject could do. Caslari had actually treated the disease and devotes much space to clinical symptoms, therapy and diet. He does recognize the influence of the stars and of atmospheric miasms; and advocates fumigations, to correct the evil influences present in the air. He appears to conclude that the disease prevailing in 1348 was not the true plague. The work is not a scholarly one and must stem from a medical tradition quite different from that of Europe and Arabia, since there is no trace of the influence of Galen and Avicenna upon the author's philosophy of disease.

And no one should wonder that in this treatise I only present the regimen of prevention, and that I do not discuss the cure of the diseases that, in such times occur. Because in this I am not incited by envy or iniquity but by true love and charity having made this present tractate principally for the benefit of the people and not for the instruction of the physician, as I am one of the most insignificant of the medical profession in the world, in comparison to many others.

Everybody can make use of the regimen of prevention presented in the present tractate without a physician and without danger. But the regimen of treatment properly belongs to the physician, since in this anybody without the art of medicine could easily err.

Since corruption of the atmosphere is to be the major theme of the tract, Master James begins with an Introduction on the properties of temperate and uncorrupted air. Such an atmosphere " prolongs our life, promotes cheerfulness and preserves health." It is an antidote against all poisons and poisonous beasts so that " in some isles of Ireland no poisonous beasts can live nor can the people that inhabit there die of poisons or venoms." " Dead bodies there, when left in the air and not buried, at no time rot or decay." The air may, however, vary in its qualities or in its substance. Alteration in quality may be natural, as in winter cold or summer heat, or unnatural as when it is cold in summer or hot in winter or when the condition characteristic of a season is greatly exaggerated. Change in the " substance " of the air is identified with putrefaction or chemical change. Such change may be highly specific within the body. When it occurs in the blood, a continuous fever is produced, in the phlegm, a quotidian fever, in the yellow bile, a tertian fever and in the black bile, a quartan fever. So far as the air is concerned, there are two main types of change in " substance." One kind of " putrefaction " of the air may lead to the generation of living things " as we see when in summer, with rain, there is a shower of frogs and toads and other living things from the air." The other more deadly type of " putrefaction " leads to the destruction of all life. " Therefore if, in the air, so many and diverse changes, as well in its qualities as in its substance, can cause diverse properties and from diverse properties there may follow diverse consequences, no man should wonder if the air is sometimes the cause of sudden death of the people; and of diverse pestilential fevers or sores of abscesses in the axilla or in the inguinal region, or in other parts of the body, or that the small-pox or worms or other maladies most perilous and mortal should prevail. And such times can be called times of epidemic or of pestilence." If the reader of today will forget his more modern scientific knowledge, for a moment, he will see how logical this line of reasoning was and how well it formulated a series of objective scientific postulates, capable of experimental

verification—which should be the objective of scientific thought. That great pandemics of disease could be attributable only to an influence of the atmosphere was an entirely reasonable assumption.

Following this introduction, Master James proceeds in the first of six main "Articles" to define "Pestilence" as "a contra-natural change of the air in its qualities or in its substance; from which arise in living beings corruptions and sudden deaths and various maladies, in certain determined regions." This concept is generally basic in all of the plague tracts. It goes back to Galen's definition of pestilence as a disease arising from corruption of the air and attacking all or a great many people, resulting in the death of many. So Avicenna tells us that changes in the quality or substance of the air cause disease. Jacme was completely orthodox in this respect. Ibn Khatimah, in his 1349 tract expands this conception at great length. The Paris Faculty of Medicine says, "The present epidemic or pest comes directly from air corrupted in its substance." Marsilio Ficino defines pestilential fever as "a poisonous vapor hostile to life, created in the air," hostile "not because of its elementary quality but because of a specific property."

Article II of the Lerida manuscript is devoted to a more detailed analysis of the causes which operate to produce a condition favorable to an epidemic, either for a major region or for a particular locality. Here again, the ideas of the author are not unique but are the same as those advanced in most of the plague tracts. Each author has his characteristic emphasis, but fourteenth century thinking was, on the whole, fairly uniform on this matter.

Astrological influence is cited by Jacme, particularly with regard to the effect of the planets on normal seasonal changes in the qualities of the air. So far as pestilence is concerned, he cites Albert of Cologne in respect to the devastating effect of a conjunction between Jupiter and Saturn. He does not stress this factor, however; which is to the credit of the practical common sense of our Catalonian physician. It remained for the famous Compendium of the Medical Faculty of Paris to develop this particular theory in detail, a conjunction of Mars, Jupiter and Saturn in the sign of Aquarius on March 20, 1345, having been the whole cause of the trouble.

Jacme is inclined to lay much more stress on organic decomposition of various sorts as a cause contributory to atmospheric deterioration, particularly when such decomposition is accompanied by high humidity. "When in battles and long sieges a great number of people and horses have been killed and they are not buried. Then the putrefaction of the

dead bodies brings about great infection and corruption of the air. Also from decayed bodies arise flies and poisonous worms in great quantity." He suggests that a strong prevailing wind may carry such putrefaction so as to cause pestilence in another region and quotes Galen as recording such a case, in which wind contaminated by dead bodies in Ethiopia caused pestilence in Greece. Exhalations from water are dangerous because the heat of the sun evaporates from its surface vapors which are more subtle, and dangerous than the water itself. Such vapors " mix with the air, tending to corrupt, to thicken and to denaturate its substance," so that " there may arise a pestilence in the air and a universal mortality among a people of one or more regions." " Pestilence particular to one town may occur because the locality may be surrounded by pools, irrigation ditches and basins full of water." Jacme cites certain special areas in Lerida, such as the bridgehead, the neighborhood of two convents and that of the tripe butchery, where disease was believed to be particularly prevalent. These are the sort of factors emphasized by Gentile da Foligno (the author of the second of the plague tracts) and, particularly, by Ibn Khatimah, who elaborates upon them even more fully than Jacme. Johannes de Tornamiera says, in his plague tract: " In times of epidemic, you must first of all avoid corrupted air which may come from marshy, muddy and fetid places, from stagnant water and ditches, from burial places, from stables of draught animals—avoid completely such places. Furthermore, beware of fog and fetid air and as far as possible, select clear and pure air."

These passages all involve what was—for that period—reasonable interpretations of the actual relations between disease and filth, and between disease and standing water which were, in fact, to be applied in much the same form in the Great Sanitary Awakening of five centuries later. Chadwick in 1842 accepted much the same hypotheses as Jacme in 1347; and there was enough truth in these theories to make them actually work.

Of supernatural interpretations, there are several in the Jacme tract. In one place, he refers to the plagues visited upon Pharaoh for his maltreatment of the people of Israel. In another passage, he cites also threats of divine vengeance in Deuteronomy and the slaying of 70,000 of the Hebrew people until David repented of his sins " To show that God, because we deserve it, sends pestilence and mortality and other persecutions to us."

The modern reader is, naturally, interested in the part which concepts of contagion played in fourteenth century thinking about the plague.

On this point, Master James is reasonably clear. In Article I he speaks of the fact that plague originating in one region spreads to others; and gives three reasons why this occurs. First by continguity, because a corrupt air easily corrupts another near by and one sees manifestly that this is so by the experience in a similar case, viz., when a rotten pomegranate or a rotten apple contaminates the ones next to it.[8] One sees also that when a pomegranate or an apple becomes partly rotten, the putrefaction soon spreads to the whole pomegranate or the whole apple. The second process is the transportation of foods, bread and meat, from a pestilential region to another, where those who eat them fall ill of similar maladies which they will pass on to others. The third process operates when winds carry the more corrupt and pestilential air from one to another region.

In Article II, in discussing prevalence in a particular locality, Jacme gives as one reason, " contact with those sick of the pestilential malady, because from them it is transferred to others as wild fire. And it continues to spread unless God in his pity gives us his grace. And if one asks me which are the maladies that can thus be transferred from one person to another, I say that these are leprosy, or scabies, phthisis and ophthalmia, pestilential fever, small-pox and measles and skin diseases. And, in general, all maladies that come from pestilential air." This is essentially the list of transmissible diseases given in the Canon of Avicenna, and by Bernard Gordon. Finally, in a later paragraph, Jacme states that individuals may be infected by " association with a sick person who has the pestilential malady, since we had seen and heard from persons worthy of belief that the master and the servants died of the same disease, and even the physician and the confessor."

Practically all the authors of the plague tracts similarly recognize the factor of infection. Many of them, particularly the Arabs, Ibn Khatimah and Ibn Al-Khatib, emphasize it even more than does Jacme.

Article III of the Jacme text is a very brief one, dealing with the so-called " signs " of the pestilence. This term was a convention used in many of the tractates to designate phenomena which might give warning of an epidemic. " Signs " are often confused with " causes " but there seems to be an assumption that the signs are on a parallel with the pestilence itself, alike due to an underlying causative factor. The chief of these signs, according to Master James, are comets, and falling stars caused—like the epidemic itself—by alterations in the substance of the

[8] This is an interesting use of a sound analogy, to be used a century later by Fracastorius in his essay on contagion.

air. Winds and sinister combinations of the planets are also mentioned; also, the wrath of God, indicated by his sending down fire from the sky, although " this particular sign of the pestilence is not only a sign but is itself the cause which gives rise to the pestilence." Abnormal weather, plagues of snakes, frogs and worms, abandonment of their nests by birds, failure of crops and undue prevalence and seriousness of diseases other than the plague itself are signs which accompany a pestilence already in being. Many of these signs go back to Avicenna and most of them (with others such as earthquakes) are cited in other tracts. Very much the same catalogue of conditions is to be found in Noah Webster's *Brief History of Epidemic and Pestilential Diseases* (1799) where earthquakes and comets —like diseases—are assumed to result from the epidemic constitution of the atmosphere.

Article IV of the Jacme tract is again very brief. It discusses the ways in which the corruption of the air affects the human body. Its quality may influence health as do extreme cold and heat; and its changed substance corrupts the humors. An interesting interpretation of the buboes is to be found in the explanation that the corrupted humors of the blood are thrown off into the axillary or inguinal region, through vessels which serve as the sewers (latrina) of the heart.

Article V is a long section dealing with the regimen which it is hoped may prevent or mitigate the severity of the disease. In earlier chapters a few practical hints on prevention have been given. In Article II is the following important paragraph: " To prevent pestilence in a town one must take vigorous steps to avoid the throwing out of entrails and refuse of beasts, or dead beasts near the town. Nor should manure heaps be placed inside the town. Nor must it be permitted that inside the town, in the streets, either in day-time or night-time, any excrement be deposited or thrown out nor must there be kept inside the town skins to be soaked for tanning nor should cattle or other beasts be killed or butchered as has happened. From all such procedures great infection of the air occurs, in Paris, in Avignon and in Lerida." In view of the feeding habits of rats, this was sound counsel.

Also in Article II, Jacme deals with the problem of predisposing physiological causes. Those persons will be most receptive of the disease who " have a body full of humors, especially corrupt and putrid humors. And also those who the whole year long rejoice in eating and drinking much. And those who have frequent intercourse with women. And those who have the porosities of their bodies kept open either by artificial means, as those who bathe frequently, or naturally, as those who are over-sensi-

tive to hot or cold; and sweat too readily. And those whose bodies are hairy, because abundance of hair denotes wide porosities of the body."

The hygienic preventive measures recommended in Article V may be summarized under the following main headings:

a. Avoidance of extreme heat by moving to a cooler region or sleeping underground; cooling the air by evaporating water in various ways (a most interesting example of our modern procedures for summer cooling); by wearing light clothing (but avoiding chill); and by eating cooling foods, such as fruits and melons.

b. Avoidance of extreme cold, by migration or by occupying a room with ample sun; by lighting fires; by use of warm clothing; by ample exercise; and by the taking of warm and substantial foods. All these are examples of sound personal hygiene, even if they might not greatly influence bubonic plague.

c. Correction of corruption of the air. Jacme piously points out that if this corruption has been sent as a punishment for our sins, the remedies of the medical art have little value "For there is none who can oppose the might and power of God." Putrefaction coming from the earth or the water can, however, be avoided by moving up into the mountains; while, if the planets are responsible, low places and underground rooms with all windows shut are safest. Fumigations of various sorts are also recommended for the purification of the air.

d. Temperance in eating and drinking, particularly avoidance of foods liable to decomposition, and the eating of birds which feed near stagnant waters.

e. Avoidance of violent exercise.

f. Sleep is mentioned, but only with reference to good air in the sleeping room.

g. Finally, to complete the pattern of Galen's Non-naturals, Jacme has a fascinating passage on the passions and affections of the mind, as follows:

> Among other influences that must be avoided in such times (times of epidemic) are especially those of fear and imagination. For from imagination alone, can come any malady. So one will find that some people get into a consumptive state solely by imagination. This influence is of such great force that it will change the form and figure of the infant in the mother's womb.
>
> And to prove the great efficacy and the great power of imagination over our body and our lives one can quote in proof first the Holy Scripture where we read in Genesis 30 chapt. that the sheep and goats that Jacob kept, by imagination and by looking at the boughs which were of divers colors put before them by Jacob

when they conceived, gave birth to lambs and kids of divers colors and speckled white and black.

Another proof of this proposition can be made by the following experiment: When somebody stands on a level board on the flat floor he can go from one end to the other with nothing to hold on to, so as not to fall off, but when this same board is placed in a high and perilous position, no one would dare to try to pass over the said board. Evidently the difference is due wholly to the imagination. In the first case there is no fear, and in the other there is. Thus, it is evidently very dangerous and perilous in times of pestilence to imagine death and to have fear. No one, therefore, should give up hope or despair, because such fear only does great damage and no good whatsoever.

For this reason also it is to be recommended that in such times no chimes and bells should toll in case of death because the sick are subject to evil imaginings when they hear the death bells.

Evidently, Master James agrees with John Donne that the bell tolls for all; but the paragraphs above certainly form an impressive fourteenth century prelude to psychosomatic medicine.

As to the treatment of the disease, Jacme lives up to his avowed purpose of leaving medication to the physician. He does mention a few specific preventives which may be considered also as remedies such as treacle, a concoction of aloes, saffron and myrrh and "mitridatum" a confection producing immunity against poisons, derived from the legendary experience of Mithridates of Pontus. With regard to purging and bleeding, Jacme displays some conservatism, warning against purges so strong as to be dangerous. It is of interest to note that he emphasizes the risks of premature burial "because it is certain that often many men and women who suffer from this affliction are thought to be dead by the common people and many are buried alive." He suggests the use of fine woolen fibers placed at mouth or nostrils to be sure that breathing has ceased and the placing of a vessel full of water over the region of the heart. If the water does not spill "the patient can be left to the priest." But burial should be delayed for 72 hours.

Article VI which deals with pestilence as "understood morally" is of extraordinary interest. After citing various parables as to morality and social responsibility from the Old and the New Testament, Jacme says: "For those with clear and subtle understanding, all that has been said about pestilence in its natural sense, will apply equally clearly and truly to the moral pestilence."

Under this definition, pestilence is a change *contra naturam* in the courage and in the thoughts of people, from which come enmities, rancors,

wars and robberies, destruction of places and deaths in certain definite regions beyond what is customary to the people living there.

As natural pestilence produces contra-natural change and infection in the blood of the heart, and in the strength of the heart, moral pestilence similarly causes a contra-natural change in the spirit and the thought of the people. . . .

Because from the contra-natural thoughts above mentioned, one dishonors and damages the other, while a good heart, and good will and good thoughts procure or help to procure to ones fellowmen all good and all honor. On the contrary bad spirit and thoughts which are contra-natural produce contrary results. And as the common people say there is no smoke without fire and from contra-natural changes arise enmities among people. . . .

Properly speaking war is enmity and rancor of men of parts and other great lords; when among them such troubles arise, of necessity enmity must occur, and rancors and wars between them. . . . In the natural order of things, the cause being established, the result will necessarily follow, and thus wrath, rancor and war is sufficient cause and reason for deaths. . . . Because warring people think that they have a right to the properties of others and so they apprehend them. And since for war young people usually are chosen they naturally do not use much discretion. Therefore, if the chance is propitious, those that are not already enemies may become such, which means that they are robbers and despoilers. . . . In the wars of the great lords, each one tries to destroy as much as he can, towns and castles of the other, tearing down the one and levelling the other. . . . Such pestilence sometimes is in France, sometimes in Lombardy, sometimes in Spain, sometimes in other regions. And if such a pestilence becomes universal everywhere, I say that such would be a great sign of the advent of the son of abomination, that is the Antichrist. . . . Because if in a region it was a customary thing to have enmities and wars, destruction of places, robberies, killing of the inhabitants, I say that there cannot be in such places pestilence as here understood. But when in some region newly arises contra-natural change, and beyond custom, of spirit and of thought, of enmities and of wars, among its inhabitants where as to all the things just mentioned, the contrary was customary, I say that this is pestilence very perilous, very bad and very strange.

If Master James were alive today, it is very probable that he would consider the world since 1914 to have been in the grip of such a moral pestilence as he describes. And we may do well to echo his closing prayer that God may preserve us from "the pestilence, naturally or morally understood."

In view of the similarity of names, the untenable assumption of some commentators that Jacme d'Agramont and Johannes Jacobi of Montpellier were the same person and the hypothetical assumption that Jacobi of Montpellier may have been the son of Jacme d'Agramont, it seems of some interest to compare these two plague tractates.

The Catalan tract of 1348 and the French versification of 1357 are, of

course, on a wholly different plane. One is a popular but scientific treatise before the epidemic, the other a simplified version of practical precept and advice for the general public, after the epidemic had made its appearance. The fact that the two tracts are thus dealing with two different aspects of the problem makes minute comparison of the texts out of the question. Even when both are dealing with the same subject, as for instance with the subject of diet, comparison is impossible because in one the subject is discussed at great length and in the other in short and general terms. If, in both, the pomegranate is greatly favored it may mean merely that this was a widely popular remedy, whereas the fact that in one text duck and lamb are forbidden and in the other recommended might mean a change of opinion on this minor matter in the course of years. On reading the texts, however, no doubt is left in the mind of the reader that they are the product of two types of mentality which as a rule are mutually exclusive. This becomes startlingly clear when, in spite of the general superiority of the Catalan tract, we find in the French text two instances of extreme sagacity on the part of its author, as shown by his advice to boil well-water and not to bleed pregnant women, small children, elderly people and the sick in belly. This is obviously the result of direct observation which suggests that the French author was primarily a practitioner; whereas Jacme d'Agramont, who describes the functions of the lymphatic system, recommends a post-mortem as the best way for studying the disease and describes the flow of the blood from the heart to the rest of the body through the arteries, obviously as the result of deductive thinking was—within the limits of contemporary knowledge—a physiologist and a philosopher.

The Lerida tract was written by a man who possessed real foresight, as to the intellectual approaches that will eventually solve the universal problems of disease; a man who, although a product of the education of his time at its best, fought for a way out of the vicious circle of medieval scholasticism by trying to reduce to a rational sequence of cause and effect the unproven theories of his day. The Montpellier tract, on the other hand, is a compilation of practical precept and advice for general use, written by a man who, if learned, did not show it, and who seems to have been devoid of any power of speculation and originality but who must have been a conscientious practitioner and occasionally a keen observer of the facts that confronted him.

As to the theory that Jacobi of Montpellier might have been the son of Jacme d'Agramont it could almost be said without fear of contradiction that the man who wrote the French tract had never seen the Catalan

text, nor many other texts for that matter, as shown by his own naive admission of how little the ancients had written on the subject.

The Lerida manuscript is much more in line with many of the later plague tracts (as reviewed by Campbell (3) and by one of us (12). Its logical approach through (a) definition of a pestilence to (b) the general causes which produce a pestilence covering wide areas of the globe and those which favor it in a particular locality, to (c) the signs by which the presence of a pestilence may be recognized; then, to (d) the ways in which pestilence affects the human body, and to (e) the regimen by which its ravages may be mitigated is characteristic of the Fourteenth Century.

Jacme's emphasis on corruption of the atmosphere as the fundamental cause of a pandemic and local sources of organic decomposition as proximal factors in its local prevalence is also characteristic of most of the plague tracts; as is his citation of falling stars, meteors, etc. as signs of unnatural atmospheric conditions. He is less formal in distinguishing sharply between remote and near causes and between "causes" and "signs" than are many of the other authors, perhaps tempering scholastic logic with a more empirical spirit. His distinction between change in "substance" and in "quality" follows Avicenna and earlier writers. Incidentally the clearest analysis of "signs" appears in the later versions of the tract by Johannes Jacobi of Montpellier.

The recognition of contagion is clear in the Lerida tract, although this factor is less emphasized than by the Arab physicians, Ibn Khatimah and Ibn Al-Khatib (which is a curious fact, since the Mohammedan religion definitely banned this interpretation). Jacme touches very lightly on the influence of the stars, being much more realistically minded than the Paris Faculty. On the other hand, divine wrath occupies much of his attention. Of all the tracts written by non-clerical persons, the Lerida manuscript is perhaps the one most conventionally religious in tone.

In general, Jacme represents the best standard thinking of his period, characterized by logical analysis, tinged with empiricism. He was clearly a scholar, familiar with the best scientific documents of antiquity and the Middle Ages and also with the classics of general literature, which he cites in several places. His is a document representative of the best scientific thought of the time, not only the first but one of the best of the plague tracts. Its recognition of the distinction between public and private health was sound in the fourteenth century, however tenuous that boundary is today; and his emphasis on the responsibility for preventive measures which rests on the community is excellent. "A very profitable way of

preservation is to avoid the things that may bring pestilence . . . and if by chance they can be removed, they should be removed. And to this end, an effort should be made by the Lords and their officers, whose duty it is to look after the usefulness and well-being of the community—to which should be subjected all other good and profit of a private nature." Finally, Jacme's treatment of mental hygiene and his mystical but highly suggestive discussion of "moral pestilence" mark him as a thinker of distinct originality.

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VITAMIN A DEFICIENCY AND THE SKIN IN RETROSPECT AN HISTORICAL SEARCH INTO NOSOLOGICAL ANTECEDENTS *

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The natural history of a disease, like that of a human life, is made up of numerous episodes, each distinct and complete in itself yet related one with the other. The history of syphilis includes the story of tabes dorsalis; that of allergy, the story of urticaria and its relation to vascular reaction. The history of a disease, and of diseases, continues to grow as knowledge advances along many lines. In some instances only a beginning has been made in bringing together hitherto apparently unrelated phenomena into a unified and integrated whole.

A study of the growth of the still incomplete clinical concept of the disease caused by a deficiency of vitamin A in the human body has many points of interest. The history of xerophthalmia has been told in part by others. The part played by the respiratory, the genito-urinary, and the nervous systems, and by other structures of the body is still in process of evolution. Inasmuch as a follicular hyperkeratosis of the skin was not identified as among the manifestations of this nutritional disorder until 1930 (1), the question naturally arises as to the interpretation formerly placed upon the dermatosis. Its existence before that time is, of course, a natural assumption.

A host of skin diseases related to keratosis of the hair follicles has been described in the past under a variety of names, descriptive anatomically, yet of no etiologic connotation. It seemed probable that among these diseases the dermatosis of vitamin A deficiency was to be found. As time has passed names have multiplied so that the problem of nomenclature alone is formidable. Many of the papers we have read were written before the discovery of the vitamins and, in fact, before much was known concerning the dietary requirements of the human organism. We have attempted to trace the origin, changes in meaning, struggles with rival terms and the ultimate fate of those surviving diseases whose names are still to be found in medical literature.

Although there is no possibility of defining with certainty any of the conditions referred to in the terms of the present-day conception of nutri-

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tional diseases, there are certain anatomical similarities, possible identities, and a few suggestive etiologic and therapeutic observations which merit discussion.

It is now one hundred and forty years since Robert Willan (1757-1812) wrote *On Cutaneous Diseases*, and inaugurated the era of modern dermatology (2). It was the age of artificial Linnean classifications when the doctrine of the eruption was prominent in the minds of physicians (3). The tendency was to individualize morphological forms and to create from them, in terms of an elaborate nomenclature, numerous disease entities. Many of these represented only stages in the development of a single disease process or but variations in form and distribution of related eruptive lesions.

When once the essential form of a lesion, and of its variants, is identified with the names which differences in language and in personal preference have given it, there is no great difficulty in finding one's way back through the records of the past. There are, however, additional obstacles to the interpretation of the significance of an eruptive lesion. These come from an almost universal omission from case records of data related to the general historical and physical findings associated with cutaneous lesions. The skin, insofar as its diseases are concerned, has not been thought of as an organ of the body intimately related to other tissues and organs in the general reaction to injurious agents.

Until the time of Ferdinand Hebra (1816-1880), the study of the histological anatomy of cutaneous diseases had not progressed very far. The description of an eruption was limited to its gross appearance. As one goes further back into the past, the descriptions become less vivid, and the language more vague as changes in the meaning and use of descriptive terminology find their way into the printed text. But the greatest obstacle of all to a study such as this is imposed by an almost universal failure to view the patient as a unified living organism. In the hands of the dermatologist he has remained, for some reason, only an expanse of skin, hair and nails.

The frequent occurrence of a uniform cutaneous lesion in association with xerophthalmia and keratomalacia first drew our attention to the relationship of the eruption to vitamin A. These changes in the skin, we now believe, are specific effects of a deficiency in vitamin A, and one of the important signs of the disease.

The eruption is distinguished by hyperkeratosis of the hair follicles in the form of dry, firm, pigmented papules which bear a central keratotic plug. The skin in general is dry. Inhibition of secretory function is an

early sign of the disease. At times the keratotic plugs project from the hair follicles as horny spines (Fig. 1). Early in their development the papules are small and conical, like goose-flesh (Fig. 2). When the lesion resolves it may leave behind a small scar at the follicular orifice. Histologically there is atrophy of the sebaceous gland and destruction of the hair follicle.

The eruption appears rather suddenly over a localized area and extends, as a rule, with considerable rapidity to cover large areas of the trunk and extremities. Or it may remain localized on the neck, face, or arm, as the case may be, or appear in patches on the trunk. Usually it is symmetrically distributed.

Variations in the eruption are fairly wide, both in the appearance of the individual lesions (4) and in their distribution. The form and size of the follicular elements present polymorphous features, but the essential characteristics are remarkably constant.

The eruption is at times abortive and shows no tendency to spread; in other cases it becomes prominent and profuse. On the face it resembles acne, due to the presence of many comedones and acneiform papules. Like acne, the keratotic eruption appears chiefly in adolescent youth and seldom beyond the twenty-fifth year of life.

Usually the cutaneous manifestation of the disease precedes the onset of xerophthalmia. In some persons changes in the skin are the only visible manifestation of nutritional deficiency (5).

In young children and infants, the follicular element of the eruption, at least so far as it presents itself to the eye, is but poorly developed (Fig. 2), or absent altogether. In cases such as these, the skin is diffusely xerotic, usually to a mild degree, but at times so severe as to warrant a diagnosis of ichthyosis.

This resume of the character of the eruptive lesions will serve as a basis for reference. In looking back over the past, we have been concerned with morphology and the occurrence of the various anatomical forms suggestive of vitamin A deficiency. We have also kept in mind the association of eruption with diseases or physiological states which might be related to excessive nutritional demands, or to impairment of the normal digestive or assimilative functions. Especial attention has been given to concomitant disease of the eyes, and to the signs of other vitamin deficiencies.

The first objective offered but little difficulty, for there is an abundance of detailed description of related eruptions. But with the other points of reference many difficulties presented themselves. A person may look

Fig. 1. Follicular papules with central horny spines, caused by a deficiency in Vitamin A.

well nourished and yet be suffering from a specific nutritional deficiency. Unless a careful examination was made of the patient, physical abnormalities, other than those of the skin, were not recorded. Many of the cases reported were presented at clinical meetings. In such instances the discussions were frequently of assistance in bringing together a variety of related or identical conditions, differently named.

In his treatise *On Cutaneous Diseases*, Robert Willan, in 1808, classified the eruptive lesions of the skin in such a way as to include them under four orders, namely, papulae, squamae, exanthemata, and bullae. The papulae he subdivided into three genera, the second of which was called lichen. In the writings of Hippocrates, the term lichen, or lichenes, denoted an eruption of papules. "The resemblance of these eruptions to the tuberculated lichens which grow upon stones, shrubs, or the bark of trees, is, however, so striking, that the application of the same term to express both these appearances seems obvious, and natural." These are the words of Willan. Willan also said that all the translations of the Greek medical writers had used impetigo as synonymous with the original term lichen, but that Celsus had expressed the real relations between lichen and papula, and impetigo where he said that papula "Through neglect or improper treatment is often changed into impetigo." This last statement, at least, has a modern note in it. "I think therefore," continued Willan, "we may establish an useful distinction in cutaneous disorders, if, in conformity to the original sense of the word, the lichen be defined, an extensive eruption of papulae affecting adults, connected with internal disorder, usually terminating in Scurf; recurrent; not contagious."

The varieties of lichen, Willan described under the titles, lichen simplex, lichen pilaris, lichen circumscriptus, lichen agrius, lichen lividus, and lichen tropicus. The first of these was an acute disease occurring in persons of a "very weak and irritable constitution," usually about the beginning of summer, or in the autumn. It was often mistaken for measles or scarlet fever, and was not easy to distinguish from scabies. The last variety, lichen tropicus, was prickly heat. Both of these varieties of the lichen obviously were unrelated to nutritional deficiency, or at least bore no resemblance to the follicular hyperkeratosis of vitamin A deficiency. Lichen pilaris, however, is of interest as it consisted of "small tubercles or asperities" which appeared only at the "roots of the hairs of the skin, being probably occasioned by an enlargement of their bulbs, or an unusual fulness of the blood vessels distributed through them. This affection may be distinguished from the cutis anserina by its permanency, by its red papulae, and by the troublesome itching or tingling which

Fig. 2. Minimal type of follicular hyperkeratosis of the skin in an infant, who also had vitamin A deficiency disease of the eyes.

attends it." It is said that the lichen pilaris was connected with disorders of the stomach and bowels, and was often seen " in persons accustomed to drink largely of spirituous liquors undiluted." In passing, it is of interest to note the appearance, at the present, of nutritional deficiencies in persons addicted chronically to the use of alcoholic beverages.

It was with the fifth variety of Willan's lichen that there is more than a suggestion of a nutritional etiology. In lichen lividus the papules of the eruption were of a " dark red, or livid hue, and somewhat more permanent than in the foregoing species of lichen." According to Willan's definition, a papule was " a very small and acuminated elevation of the cuticle." In lichen lividus, the papules appeared chiefly on the arms, and legs, but sometimes extended to other parts of the body. They were finally succeeded, though at very uncertain periods, by slight exfoliations of the cuticle; after which a fresh eruption usually took place, and in this manner the complaint was prolonged for several months. The eruption was not attended by fever. It principally affected persons of " a weak constitution, who lived on a poor diet, and were engaged in laborious occupations." Young persons and children, residing in confined situations, were also subject to lichen lividus, and in them the papules were mixed with petechiae, or larger purple patches. " This circumstance," according to Willan, " points out the affinity of the lichen lividus with the purpura or land-scurvy; and the connection is further proved by the similarity of exciting causes."

Land-scurvy was a disease, known also as purpura hemorrhagica. This disease, characterized by extravasations of blood into the skin, Willan thought, stood midway between simple purpura and scorbutus, or sea-scurvy. It is reasonable to think that among these purpuric conditions were cases of the disease we know as scurvy.

This pioneer British dermatologist was of the opinion that the real cause of land scurvy was unknown. He noted, however, that the disease occurred " chiefly among the lowest class of people, who are ill-fed . . . , and that it often accompanies convalescence from severe disease—conditions all of which favor the occurrence of scurvy." He stated also that there were observations on record to prove that purpura hemorrhagica may develop under exactly opposite circumstances, namely, among strong and well-fed persons who lived in the greatest comfort. With contradictory observations such as these, he was unable to deal. He consequently tended to dismiss the whole argument and to consider the circumstances attending the oubreak of land-scurvy as coincidental only. This retreat from observed facts was unnecessary, for he had no doubt seen correctly.

Under the first set of circumstances scurvy would likely have appeared; under the second, the purpura due to blood dyscrasias and hereditary defects. Osler credited Willan with the first description of a case of purpura associated with abdominal symptoms (6), a symptom complex later described by Henoch and to which his name is attached. It appears that the same treatment was efficacious in land-scurvy and lichen lividus. "They are presently cured by nourishing food, moderate exercise in the open air, with the use of Peruvian bark, and vitriolic acid, or the tincture of muriated iron."

Many years earlier, the use of "vegetable acids and crude herbs," such as horse radish, was the practice in treating scorbutic conditions. Hoffman (1660-1742) observed that in scorbutic rheumatism eruptions of different kinds occurred, and proceed from "unwholesome, hard, salt diet, an idle and sedentary life, the common use of a heavy, vapid air, and long continued grief; and hence the inhabitants of sea-ports are generally most subject to it" (7).

In connection with the observation that both the papular and hemorrhagic elements of lichen lividus resolved under dietary regimes like those used in land-scurvy, a medicinal recipe recommended by Thomas Sydenham (1624-1689) is not without significance. It occurs in the section of his book dealing with the treatment of scurvy.

> Take of the root of horse-radish, sliced thin, two pounds; the root of wake robin, a pound; the leaves of garden scurvy-grass, twelve handfuls; mint, sage, water-cresses, and brooklime, of each six handfuls; scurvy-grass seed, a little bruised, half a pound; nutmegs, half an ounce; white wine, six quarts; draw off only three quarts for use in a common still (8).

The ingredients of the recipe, as can be seen, contained sources, some potent, of vitamins A, B, and C.

It is, of course, impossible to offer more than a conjectural statement with regard to the identity of lichen lividus, but certain characteristics of the papular lesions, and also those of lichen pilaris, bear resemblances to the eruption in vitamin A deficiency. The lesions of lichen pilaris as described by Willan involved the hair follicles. Bateman, a contemporary of Willan, considered lichen pilaris merely a modification of lichen lividus.

In 1829, A. T. Thomson, author of an atlas of skin diseases which contained illustrations (Fig. 3) of the descriptions of Bateman, said that the papules of lichen lividus were "distinct, of a livid or, dark hue, small and hard" (9). This describes very aptly the horny papules with which we are familiar. Because of the almost complete lack of knowledge con-

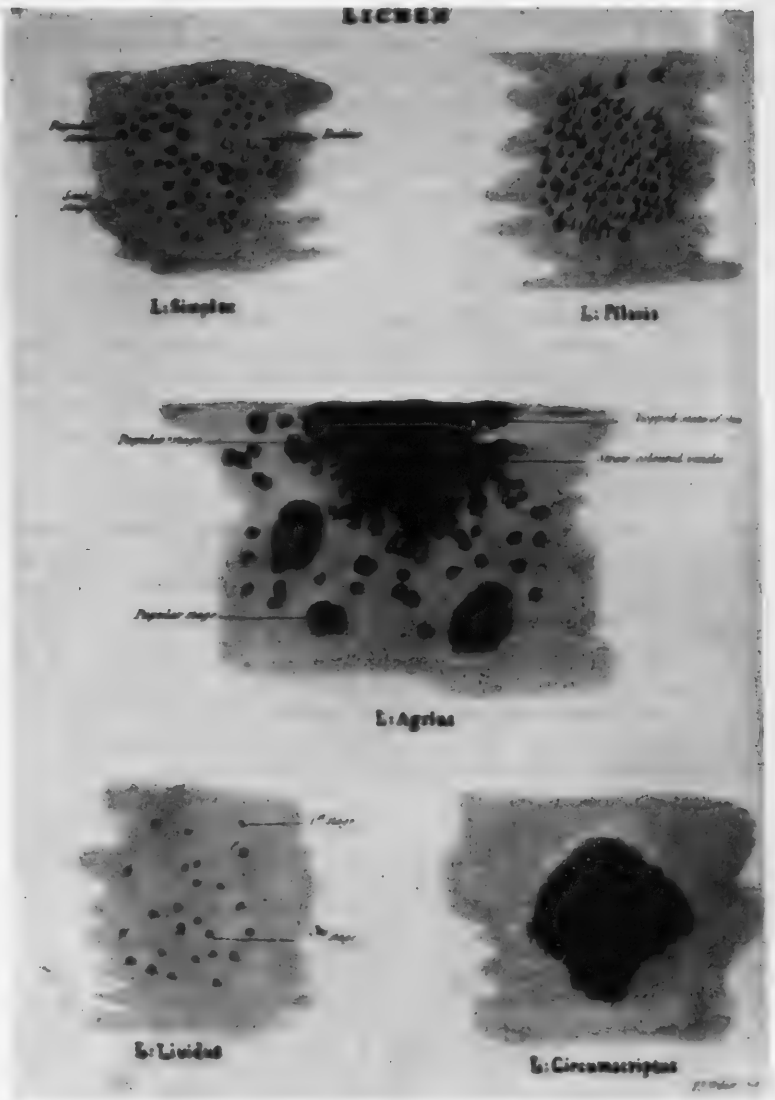

Fig. 3. The Lichen (From A. T. Thomson: *Atlas of Delineations of Cutaneous Eruptions*, London, 1829).

cerning the histological nature of cutaneous diseases at the time Willan and Bateman wrote, a more precise description of the lesions is hardly to be expected.

The presence of purpuric lesions in association with the papular eruption, such as was recognized as occurring in scurvy, is a point which needs explanation. We shall return later to this in discussing the occurrence of follicular hyperkeratosis and night blindness, another symptom of vitamin A deficiency, in patients with frank signs of scurvy.

It is also worthy of note that Thomas Bateman (1778-1821), Willan's outstanding disciple and successor, in the third edition of *A Practical Synopsis of Cutaneous Diseases* published in London in the year 1814, referred to the occasional appearance of follicular papules as a sequela to acute fevers.

Signs of vitamin deficiency not only follow the consumption of a diet poor in a specific element, but they may also appear in connection with chronic diseases of the gastro-intestinal tract, should the disease be of such a nature as to interfere with assimilation of the vitamin. In other cases, when a person who is without manifest signs of deficiency disease, is subsisting on a marginal diet, the appearance of an intercurrent disease of severity or chronicity may be the precipitating factor in the sudden appearance of nutritional disease. Rapid growth with the increase of nutritional demands of the organism, as in the adolescent youth, or the undertaking of prolonged and vigorous physical labor, may likewise be the immediate cause of active signs of nutritional failure.

The factor of accidental incidents in depriving the body of needed aliments was recognized by Sydenham when he said:

> Neither are we ignorant that as many symptoms, resembling the scurvy, afflict gouty persons after the fit of the gout is over; namely, when an unseasonable use of evacuations, or the advanced age of the patient, or some other cause hath obstructed nature, so as to have rendered her unable to throw off all the gouty matter upon the joints; which being retained, and yet of no use, vitiates the mass of blood, and occasions many dangerous symptoms. And this is to be understood not only of the gout, but also of a beginning dropsy. Tho it is proverbially said, that where the scurvy ends the dropsy begins (10).

Willan stated that an eruption similar to lichen lividus often occurred in secondary syphilis. He recognized that syphilitic lichen was unlike other species of lichen lividus. In syphilis he observed that the papules seldom became scaly, but instead developed into pustules which later ulcerated. He knew that the syphilitic lichen was not altered by any change in the diet. This observation is not only interesting but of con-

siderable importance. By it Willan differentiated the lichenoid syphilide from the papular eruption known at the time as lichen lividus. This conclusion is a mark of careful clinical observation, and an indication of mental habits still worthy of our emulation. The thoughts of Willan on the alleviation of disease by dietary agents were perhaps the reflection of contemporary practice in the treatment of scurvy. He saw in the petechial element of lichen lividus, lesions analogous to the livid spots of scurvy. He knew these spots mean hemorrhage into the skin.

In avitaminosis A it is not unusual before the appearance of follicular hyperkeratosis to find the skin generally dry and covered with fine scales. Sometimes a mild condition of xeroderma takes on a more exaggerated form which cannot be distinguished from ichthyosis. Willan recognized that, in addition to a form of ichthyosis which tended to appear in certain families, there was also a similar condition of the skin that " occurs on the limbs of persons, who, from long continued ill-health, or weakly constitution, are much emaciated, and have little perspiration." It is this condition which is referred to by some authors as pityriasis tabescentium. It occurred not only among scrofulous individuals, but also in association with syphilis, chlorosis and cancer. Willan recommended the internal use of pitch as having the effect of restoring the skin to its natural pliancy. This association of a dry and scurfy skin with general malnutrition is well known to the present time.

Erasmus Wilson (1809-1884), writing in 1847, followed closely the classification of the lichens proposed by Willan. He described lichen lividus as occurring " in persons of weakly and debilitated constitution, or in those who are ill-fed, badly clothed, and live in unhealthy and confined situations " (11). The disease was also occasionally met with among the " squalid inmates " of workhouses.

Various infectious diseases were possibly included among this group of lichens. There is no way of knowing. At the time Wilson wrote, scabies was attracting the attention of physicians, and great interest was being displayed in the demonstration of the itch mite. The characteristics of insect bites were known, and many years before, Willan had mentioned the similarity between petechiae and flea bites.

A quarter of a century later, in writing of nutritive defects and their influence on the skin, Wilson (12) stated that " under altered nutrition of the epithelium " there was " simple hypertrophy of the epidermis, and metamorphosis of the epithelium of the lining of the follicle." " It sometimes happens," he observed, " that the little horny plug of epidermis which occupies the mouth of the follicle manifests an increase of growth,

without any apparent change in the surrounding parts. Epidermic hypertrophy gives rise to a papule larger than that of lichen, hemispherical in figure, yellowish smooth; and transparent, and perforated in the center by the aperture of the pore." He had seen several hundred of such papules on the forearms, and believed they were a consequence of the abuse of arsenic.

In speaking of a metamorphosis of epithelium under an altered state of nutrition, Wilson came close to a statement of the metaplasia of epithelium now known to result from a deficiency of vitamin A in the body. The specific effect of a deficiency of this vitamin is a metaplasia of simple epithelium to a stratified keratinizing form.

Following Wilson, the term lichen lividus disappeared from the medical writings of the time. In 1836, Pierre Rayer (1793-1867), one of the great figures in French dermatology, regarded lichen lividus as a rare affection and said that he had seen only three cases in his practice. Hebra finally disposed of the term when he redefined the lichens and introduced histological technique into the study and description of skin diseases.

In discussing Willan's classification of the lichens, Hebra (13) concluded that lichen pilaris and lichen lividus were affections naturally unrelated to other members of the group. This was in 1856. In connection with the elimination of Willan's terms, lichen pilaris and lichen lividus, Hebra for the first time described with considerable accuracy one of the characteristics of the papular lesions in lichen pilaris. The accumulation of material found within the " entrances of the hair-sac," which earlier authors had referred to as masses of hardened sebum, Hebra described as the " cone of the epidermis." This he found was a laminated epidermal structure containing at times a coiled-up hair. He attempted also to differentiate the comedo from the epidermal mass, but in this he partially failed. He removed lichen lividus from the terms he would use by saying that it was a " haemorrhage into the rete mucosum." He thought that blood exuded in the form of drops, which " coagulate and push forward the horny layers of the epidermis, and so produce papules." A careful reading, however, of Willan's description and a knowledge of the form of lesion produced by small hemorrhages into the skin must lead to a different conclusion. Descriptions of lichen lividus by the contemporaries of Willan, to which we have previously referred, show Hebra's interpretation to be ill-founded. It is likely that Willan included in the disease he called lichen lividus papular forms which were interspersed by petechiae, or livid spots (14). If the papules did show signs of hemorrhage, it was superimposed and secondary in nature. The illustrations accompanying

the early texts seem to support this assumption. It is not clear, however, whether the papular lesions of lichen lividus had in them the central horny masses or spines which we now associate with vitamin A deficiency. That the papules of lichen pilaris did, there is no doubt. It is, however, with lichen lividus rather than with lichen pilaris that Willan and other authors emphasized the relationship of a variety of circumstances highly suggestive of nutritional deficiency.

Returning to the early classifications, Hebra thought that Willan had placed a very mixed group of diseases under the term lichen. According to Hebra, the lichen of Willan was composed of " diseases of the sebaceous glands, guttiform extravasations beneath the epidermis and affections consisting in swelling of the apertures of the hair-sacs." They were unrelated affections bound together only by the common character of a variable papular form. Hebra proposed, therefore, to use the term lichen more in accordance with the original meaning given it by Hippocrates and Galen, and by writers such as Antoine Lorry (1725-1783) in France, and Joseph Plenck (1732-1807) in Vienna. He would have had its use confined to those " affections which are not merely attended with the formation of papules, but are also characterized by having their origin in a definite morbid process." He provided further in his definition that the papular lesions should not undergo any change throughout the course of the disease. In this way the name lichen was made to answer a fixed type of disease (ein stetiges Kranksein repräsentiren) (15). This latter conception of disease is of course untenable and, moreover, is contradictory to other opinions Hebra expressed. For like life itself, disease is a moving phenomenon, always in flux until it reaches the end of its course. This point of view, no doubt, sprang from Hebra's great interest in the histological aspect of disease. Unfortunately, however, it still colors, to some extent, the area of medicine in which he worked.

Hebra believed that bed-side observation showed two diseases which fulfilled the requirements he laid down for the lichens. " One belongs," he said, " to the early period of life and is susceptible of cure; and as it constantly accompanies glandular swellings, caries, periosteal inflammation, lupus, tuberculosis and other expressions of the scrofulous diathesis," he termed this lichen scrofulosorum (15). The second was a disease which he called lichen ruber.

A careful consideration of lichen scrofulosorum and lichen ruber with respect to the historical development of these clinical syndromes is desirable. A tradition has grown linking lichen scrofulosorum with tuberculosis—a tradition for which there is no adequate bacteriologic proof.

It should be emphasized, however, that tuberculous individuals not infrequently are poorly nourished, and that there is no reason not to acknowledge that in such cases diseases other than tuberculosis may be found in the same person. Active tuberculous infections of the pulmonary tissues, as of other organs and tissues, may coexist with nutritional deficiency diseases. This association is not only a possibility, but a clinical reality in those parts of the world where both forms of disease are commonly seen.

Certain characteristics of lichen scrofulosorum as they were described by Hebra are worthy of attention. It is an eruption of miliary papules, varying in color from that of the skin to a brownish-red. The lesions are chronic and do not change much in appearance. They tend to occur in groups, usually on the trunk. Each papule is seated at the aperture of the hair follicle and forms an elevation consisting of a mass of epidermis which may be completely detached from its bed without any blood escaping. The epidermal cells which make up these little elevations do not in any way differ morphologically from those of the normal horny layer of the cuticle. Hebra found the disease occurring only in males between the ages of 15 and 25 years. Some of the patients affected were in a low state of health, thin, and of cachectic appearance, however, others looked well nourished. Hebra expressed himself as follows in stating his reason for calling the condition tuberculous. " The fact that this hitherto undescribed cutaneous affection is almost confined to persons of scrofulous habit is surely a proof that scrofulosis is the cause of it." Hebra considered the prognosis always favorable if the patient were placed in a favorable condition to the constitutional disease. He went so far as to say that he had invariably cured the disease and had never seen a relapse even in the presence of severe and destructive scrofulous disease. His treatment was cod liver oil in amounts of from a half to two ounces daily, and a liberal amount of nourishment, particularly meat. With this treatment the cutaneous eruption healed in five months, but if left untreated it might persist for as long as five years.

It is of further interest that in none of the 50 or more cases of the affection which he observed was he able to detect " any symptom pointing to tuberculous disease " of the lungs. As none of his patients died, he had no opportunity to make postmortem studies.

This description sounds very much like that of the dermatosis associated with vitamin A deficiency. Even the period required for recovery under cod liver oil therapy is about the same. The distribution of the lesions in circular groups on the trunk varies somewhat from the distribution of the lesions in cases of vitamin A deficiency. The question of

distribution is one brought up by Hebra in his conclusion as to the specific nature of the disease. He remarked that some physicians thought the disease he had described to be nothing more than pityriasis tabescentium scrofulosorum, which was evidently not an infrequent cutaneous abnormality recognized at that time. It also occurred in persons emaciated from chronic disease. This identity Hebra could not accept, for he said it is indeed possible that these diseases may both be due to the formation of sebum (Hebra, even, was unable to get away from this) in excessive quantity or to a morbid development of the epidermis and its saturation with sebaceous matter. But there is still the distinction that lichen scrofulosorum is confined to certain points, at which papules arise, collected in groups; whereas in the pityriasis tabescentium it is more widely diffused and affects the whole surface of the skin. This, indeed, is not a very significant difference. The distribution of the follicular papules in vitamin A deficiency is even more variable. It requires more than this difference to establish two separate and distinct diseases. It is safe to conclude that lichen scrofulosorum and pityriasis tabescentium were related, perhaps very closely.

It is of interest, too, that accompanying the two conditions there occurred at times the acne of cachexia, acne cachecticorum or acne scrofulosorum (16). Hebra observed that unlike the acne of adolescence, the skin in the acne of cachexia was dry, not oily, and there was " a multitude of diverse eruptions " which appeared simultaneously over the whole body surface. The nodules or pustules remained much longer than in common acne, and without change. After they had disappeared there remained for a very long time macules " remarkable by their vivid pigment." He had seen the acne-like lesions also appear in patients recovering from the scurvy, when each papule was surrounded with a livid, hemorrhagic, purplish border. The drugs commonly recommended in the treatment of common acne " failed miserably."

Hebra was well acquainted with the various types of acne. He recognized the acne occurring at puberty and continuing during adolescence. He had even observed its rarity among eunuchs. He knew that iodine when taken internally, and that tar when it came in contact with the skin, produced in some people an acneiform eruption. So it is a point of some significance when he said that " only in acne scrofulosorum can I recommend the internal use of cod liver oil, since I have made repeated trials of it, uncomplicated by any external application, and have always found the practice crowned with success." When the acne occurred in scorbutic patients a treatment directed against the constitutional complaint also led

to the disappearance of the cutaneous disease. It should be remembered that the older materia medica of scurvy contained not only sources of vitamin C but green vegetables, potent sources of the precursors of vitamin A.

In accordance with Willan's classification, it seems not unlikely that lichen scrofulosorum would have been called lichen pilaris or lichen circumscriptus. Fagge, who made the English translation of Hebra's work, remarked that English writers were generally unable to identify the disease Hebra called lichen scrofulosorum with any disease seen by themselves. He saw, however, in Hebra's clinic such cases which he would have called lichen circumscriptus.

Lichen circumscriptus was a disease described by Willan. It consisted of papules arranged in clusters, or patches, which were of an irregular form, but with well-defined margins. The patches appeared in succession, on the limbs, or trunk of the body. There was peripheral extension of the papules. The older ones healed with exfoliation, leaving the central part of the patch smoother than the periphery. The disease lasted for six or eight weeks. It sometimes appeared in adults during the progress of vaccine inoculation. No other reference to associated findings was made by Willan.

Pityriasis tabescentium was a diffuse xerosis of the skin which was not peculiar to scrofulous patients, but was likewise observed in those afflicted with syphilis, chlorosis, or cancer, that is, in those who had suffered for a considerable time from a wasting and debilitating disease. Xerotic and ichthyosiform conditions of the skin continue to be familiar developments in conditions of malnutrition and dehydration today. Their relationship to specific dietary elements may be doubted; nevertheless, in certain instances it seems likely that these conditions are manifestations of vitamin A deficiency. They have been observed to disappear following the administration of cod liver oil, or other vitamin A containing remedies.

The second of the diseases which Hebra classified as lichen, was lichen ruber. Lichen ruber was a disease first described by Hebra in 1858. This disease deeply interested Hebra because it was an affection " so peculiar in its symptoms, course and mode of termination, that I have not been able to identify it with any of the complaints or figured in works upon the subject. . . . I have found it to be manifestly a special disease, and have assigned it to a place in my system." He gives as reasons for his choosing the name lichen ruber the following: " In the first place it leads to the formation of papules which remain unchanged throughout the whole course of their existence, never passing into vesicles and pustules, and, in

fact, undergoing no alteration whatever, except that the subsequent springing up of fresh papules may cause them to coalesce into circumscribed patches. Secondly, both the papules themselves and the patches which are thus formed from them invariably possess a marked dark-red color and retain it under all circumstances" (15). There were instances in which he noted the presence of constitutional symptoms such as impairment of nutrition, loss of flesh and even marasmus.

Hebra recognized the seat of the initial papular lesions was in the follicular and peri-follicular structure. As to the etiology of this new affection, Hebra stated that he could find no possible cause for it "either in the mode of life, the occupation, or the hygienic conditions of those suffering from it, nor, again, in any complaint with which they had been previously affected. . . . At present no safe basis can be found for even a probable hypothesis as to the cause of this mysterious affection."

There arose from this exposition of a new disease several complicating problems. In 1857, the French dermatologist Alphonse Devergie (1798-1879), director of the Hôpital St. Louis, had published his treatise on diseases of the skin—*Traité Pratique des Maladies de la Peau*. In this he described a condition which he called pityriasis pilaris. Up to the time of Devergie's description of pityriasis pilaris, he had seen four cases. Beeson has translated Devergie's original description as follows (17):

> The disorder which I am about to describe and which I observed for the first time toward the end of 1854, has not as yet attracted the attention of dermatologists. It is a new kind of scaling disorder to add to those already known. I have described it under the title of pityriasis pilaris even though it has certain of the characteristics of psoriasis; but since it is preceded by pityriasis and moreover because its scales are very minute and easily detached, I have thought it best to describe it under this name rather than under that of psoriasis pilaris. It is found essentially in the skin which covers the hairy portions of the body, the scalp excepted, for I have not found it there. It is located particularly on the extremities, especially the forearms and the legs where it affects in a characteristic manner those hair follicles which are grouped in ovoid patches over the backs of the first phalanges of the fingers. It may, however, appear anywhere upon the body surface, save the scalp. The disorder produces a thickening of the skin which is adjacent to as well as over the hair follicles, along with a chronic redness so that the base of each follicle represents a tiny conical pyramid, from the summit of which a hair protrudes. At the summits of these conical elevations which are traversed by hairs, there exists a tiny scale which is partly free and in part adherent. This affection is most often free from itching. Pityriasis pilaris presents a chronic course and is of long duration. It is most rebellious to treatment, even resisting arsenic. Here is therefore a new scaling disorder, more resistant perhaps than all of the others which have been described, ichthyosis excepted, but what is most unfortunate is that it affects the uncovered parts which ichthyosis spares.

Thus we see that within the period of one year, Devergie and Hebra had independently described what each considered a new affection. The foundation had been laid for a heated controversy over the similarity and dissimilarity of the two conditions—lichen ruber and pityriasis pilaris. This controversy, which was to last for more than three decades and far outlive either Devergie or Hebra, was carried on with unabated warmth by their respective disciples. For Richaud in 1877, and Brocq in 1884, together with others from the Hôpital St. Louis, added extensively to the cause of "pityriasis pilaris"—by contributing cases. The famed Museum of the Hôpital St. Louis, which Devergie had founded before his death in 1879, was filled with casts of "Devergie's disease" in many stages. In 1889, Besnier in a thorough paper, "Observation pour servir à l'histoire clinique du pityriasis rubra pilaire" reviewed the subject and added the word "rubra" to the title, thus giving the name "pityriasis rubra pilaris." He concluded that cases which had been intermittently described by Hutchinson, Hillier and Tilbury Fox under the name lichen psoriasis were in reality cases of pityriasis rubra pilaris.

Similarly, in Austria and Germany, Hebra's disciples—Kaposi, Neumann, Biesiadecki, Joseph and others—reported cases of lichen ruber, which they believed to be an entity. In 1887, in order to remedy the confusion between lichen planus (described by Erasmus Wilson) and Hebra's lichen ruber, Kaposi, Hebra's successor, reclassified Hebra's lichen ruber into two groups: Lichen ruber acuminatus and lichen ruber planus (18). He believed that lichen ruber acuminatus, with the conical, crowned, follicular eruption, was the form originally described by Hebra under the title lichen ruber.

Although the French remained adamant and insisted that Devergie's was a distinct disease, when, at successive meetings of the International Congress of Dermatology (1889 and 1892), the same cases were claimed as typical lichen ruber acuminatus by Kaposi and the Viennese school and as pityriasis rubra pilaris by the French, a turning point was reached. Crocker, writing in 1896, makes the sound observation that "it appears to me probable that one reason why Pityriasis Rubra Pilaris and Lichen Ruber Acuminatus have been regarded as different diseases, is that the extreme links of the chain of varieties have been contracted, while few men meet with the various intermediate links in their own practice, so that the general resemblances are not recognized."

Gradually, in the course of the final decade of the 19th Century, the sameness of the conditions came to be admitted by all, and the disease became known as Devergie's disease or pityriasis rubra pilaris, which names still prevail today.

This disease was also described in America by Taylor (1889) (19), Bronson (1893) (20), White (1894) (21), and individually by Zeisler, Ravogli and Heidingsfeld (1899) (22), and others. Of interest are two photographs accompanying Taylor's paper. One (Fig. 4) shows hyperkeratotic follicular lesions on the dorsum of the hand in a case of lichen ruber, and the other (Fig. 5) the " old, infiltrated, scaly, corrugated patch at the elbow, and newly appearing discrete papules on the arm and forearm." These photographs show lesions remarkably similar to those of vitamin A insufficiency.

With regard to the treatment of pityriasis rubra pilaris the American dermatologists made an observation which seems to us most noteworthy. The Europeans had tried many medicaments, both local and alimental—all dishearteningly unsuccessful. For the most recalcitrant cases, arsenic was championed by them—arsenic in several forms and varying dosages, and these too with a dearth of favorable results. Fnding arsenic did not seem to be of any special efficacy, the Americans learned that the treatment of this malady, pityriasis rubra pilaris, consisted essentially in the administration of tonics to improve the appetite, in seeing that " proper living and proper food " were obtained, and that " if the nutrition is poor, cod-liver oil is a remedy of considerable value " (23). Under this early therapeutic regime we find complete cures reported in this country.

One of the most enlightening of the publications we have reviewed is a paper by Prince A. Morrow, who in 1886 reported to the 10th Annual Meeting of the American Dermatological Association in more than the usual general detail the case of a sailor, 21 years of age, under the title of " Keratosis Follicularis Associated with Fissuring of the Tongue and Leukoplakia Buccalis " (24). He had been seen in December, 1885, at which time he gave a history of having had a generalized cutaneous eruption of a follicular nature for five years. With the exception of the face, palms and soles, the entire surface of the body was covered with elevated hair follicles filled by round or comedo-like substance, grayish or dark in color, which protruded from some of the papules in the shape of spinous prolongations. There was a grayish or brownish discoloration of the skin, most marked upon the abdomen, deltoid regions and outer aspects of the thighs. In addition to the cutaneous lesions, the patient had a conjunctivitis and a slight kerato-iritis. A syphilitic etiology was at first suspected but this was not supported by the history. It is of some importance, however, that the condition of the patient improved when on land and was markedly aggravated when he was at sea. Examination of the follicular plugs in this case showed a deficiency of fatty matter and a

Fig. 4. Hyperkeratotic follicular lesions on the dorsum of the hand in a case of lichen ruber. (From R. W. Taylor: Lichen Ruber as Observed in America, and its Distinction from Lichen Planus, 1889.)

Fig. 5. Lichen Ruber, "old infiltrated, scaly, corrugated patch at the elbow and newly appearing discrete papules on the arm and forearm." (From R. W. Taylor, Lichen Ruber as Observed in America, and its Distinction from Lichen Planus, 1889.)

marked increase in corneous elements; the author thought that the cause of "cornification must be sought for in some structural peculiarity or lesion of the sebaceous glands, permitting a premature exfoliation of the epithelium before fatty transportation of the cells was complete." The probability of an associated atrophy of the sebaceous glands was assumed.

Morrow compared the lesions of this patient with the condition described by Guibout in 1879, under the name acné sebacée cornée, and thought the two conditions were closely related, although Guibout had evidently never come in contact with so generalized an eruption. The eruption described as acné cornée was usually limited to the brow, cheeks, and nose.

It seems altogether probable that Morrow's patient had keratomalacia. The presence of nutritional disorders among seamen in former days is well known, and the fact that variations in the severity of the disease coincided with his position on land or water is not without significance.

Three years later, in June 1889, James C. White (1833-1916) published an account of "a remarkable case of cutaneous disease, such as I have never seen before," when he described an interesting case of a patient whose skin had been normal until he entered the army in the War Between the States (25). Shortly after his enlistment the patient had developed skin lesions on the trunk which spread to his limbs over a period of several years. White described in detail the many types of "horny prolongations" present. He realized the interrelationship of all the lesions and traced the progressive development from the minute lesions to the largest concretions, stating that in all phases the disease was a "keratosis or modified cornification of the epithelial layers, and that the starting point of all the lesions is in or about the follicular openings." White, too, wrestled with the problem of terminology and differentiated this case from Guibout's acné sebacée cornée, Lesser's ichthyosis follicularis, Kaposi's lichen pilaris and Fox's cacotrophia folliculorum. He concluded by suggesting the name ichthyosis follicularis or keratosis follicularis be adopted for this condition.

In July of the same year, Darier, working in Paris independently, described as a disease entity the same affection under the title "psorospermose folliculaire végétante." When White saw Darier's patient at the International Congress of Dermatology in August 1889, he recognized the patient's condition as identical to that which had been described by Morrow and himself as keratosis follicularis (26). However, Darier concluded that peculiar round cells found in the microscopic sections were parasitic in nature and the causative agent of the pathological skin con-

ditions he had described. Darier believed that there exist in man cutaneous diseases which deserve the name " psorospermoses," due to the presence in the epidermis of parasites of the order of " sporozoaires."

White and Bowen questioned Darier's enthusiastic explanation that these " corps ronds " were psorosperms and parasitic in nature. However, in January of 1890, White described the third case of keratosis follicularis in America in a patient, the daughter of his original patient (27).

In 1896, John T. Bowen described the fourth American case in a 29 year old woman, who had started to develop similar hyperkeratotic follicular lesions when she reached puberty (28). Other than the itching rash and poor appetite, the patient had no complaints. Bowen steadfastly reaffirmed the belief of White and himself that Darier's " attractive and brilliant " theory that the " corps ronds " represented parasites had not " stood the test of time." He felt they represented merely an anomaly of cornification—a dyskeratosis.

Darier's enthusiastic views were supported by Lustgarten, Melassey and Balbiani, those of Bowen and White by Buzzi, Boeck and Miethke (29). Unna felt that the " corps ronds " were nothing but epithelial cells doubled up. Thus another lusty controversy was born which lasted on into the second decade of the present century before it was generally agreed that histologically the skin eruption known as keratosis follicularis and as Darier's disease was a type of dyskeratosis associated with cell degeneration of an unusual type.

Meanwhile, in 1892, H. G. Brooke in England, had described a rare affection of the skin, apparently contagious in nature, which occurred in children and sporadically in adults (30). The eruption, which he called keratosis follicularis contagiosa (Fig. 6) was characterized by an abnormal cornification of the hair follicles, some of which developed projecting spines. At first the skin became xerotic with accentuation of the cutaneous furrows and a yellowish to yellowish-black discoloration developed. The eruption had a symmetrical distribution, and the areas of predilection of the lesions were described in order of frequency as the back of the neck, the arms, forearms, hands and posterior axillary folds. As a rule, the extensor surfaces were more involved than the flexor surfaces. Hyperkeratosis was not limited to the hair follicles alone, but extended superficially beyond the follicular mouths and also slightly into the sweat ducts.

Brooke described nine cases occurring in one family, and felt that this family grouping predicated a contagious nature of the disease. There were no constitutional symptoms accompanying the affection which had

Fig. 6. Keratosis Follicularis Contagiosa. (From H. G. Brooke in the *Internationaler Atlas seltener Hautkrankheiten*, 1892, Part 7, Plate 22.)

started in one of the children and in the course of a few weeks had involved six of the seven children in the family. There was no "evidence of heredity" in the cases, and the notation was made that these cases occurred in vigorous, clean people of the working class. Graham Little reported a similar study of three cases in one family, Barbe two cases in one group, Marianelli two sisters and one brother in a family, and Boeck a father and two sons. Keratosis follicularis contagiosa differed but slightly from the condition described as keratosis follicularis—principally in the absence of the papillomatous new growths which characterized the late stages of the latter disease.

The clinical and histopathological descriptions of the disease in these various cases reported by the various authors under the titles keratosis follicularis and keratosis follicularis contagiosa correspond in the main to those of the follicular eruptions of vitamin A deficiency. Further information concerning the patients which might facilitate correlating these described conditions with a dietary inadequacy was not published. The incidence of the dermatoses described in certain family groups does not necessarily prove the disease to be contagious or infectious. It is just as plausible a deduction that as, in all likelihood, all members of the family unit partake of the same diet, the development of signs and symptoms of a dietary deficiency in one member of the family is likely to be followed shortly thereafter by the appearance of similar signs and symptoms in the others subsisting on the same marginal diet. The tendency to epidemicity of vitamin A deficiency disease within certain similar social and economic groups is now well established. There remains, however, the possibility that constitutional defects of hereditary nature may be a factor in determining the utilization of nutrients and so establish a condition predisposing to nutritional failure in affected tissues.

The factor of epidemicity was dwelt upon in 1922 by Rocamora in Barcelona, Spain, when he described the occurrence of follicular keratosis in 14 children out of 200 inmates of an orphange (31). Their ages ranged from 7 to 13 years. The children were said to be well-nourished and without other maladies except those of the skin. It is of importance, however, that some, or all of the children—the number was not stated—also showed inflammation at the labial commissure and a stomatitis which resisted treatment, signs which suggest the presence of a deficiency in some component of the vitamin B complex. One year after the cases were first seen, only one remained with signs of disease.

In discussing the cause of the dermatosis, Rocamora eliminated a fungus infection of the scalp. He was prompted to do this because of

the reported association of a diffuse follicular hyperkeratosis with kerion, an inflammatory disease of the scalp caused by a fungus infection, occurring in children. The association of kerion and keratosis of the hair follicles had originally been observed in 1911 by Jadassohn, who had attributed the eruption to the fungus infection. Jadassohn went so far as to say that he was convinced that the only case of lichen spinulosus he had ever seen was a form of tinea. Both Jadassohn and Bloch, and later Rasch (32), who had seen similar cases, recognized the resemblance of the eruption to lichen scrofulosorum, but they dismissed this diagnosis, since there was no reaction to tuberculin and no giant or epitheloid cells were found in the region of the keratosed follicles. Bloch and Rasch thought the follicular eruption was caused by "an internal toxin" resulting from the fungus infection. It would seem, however, that Rasch had some doubts about this for he remarked that the eruption continued to spread even after the kerion had disappeared. In one case, after two and a half months in the hospital, the horny papules had healed. Rasch thought the eruption looked like pityriasis rubra pilaris, nevertheless, he reported his cases under the title of secondary lichenoid trichophytides. Thus fungus infections came to be a cause of follicular hyperkeratosis. Perhaps had he possessed the curiosity of his early predecessor, Robert Willan, he might have wondered at the resolution of the lesions under conditions which probably improved the nutrition of his patients.

There remains one additional bit of unravelling to complete and explain the complexity of terms and conditions possibly related to vitamin A deficiency. Incidentally, this facet of our study reveals the contagious manner in which a confusion in nosology may be conceived and nurtured.

In 1883, Radcliffe Crocker and Colcott Fox had presented similar cases to the London Dermatological Association in which there had been an acute onset of eruptions showing pinhead-sized papules of normal skin color, located about the hair follicles, with a spiney projection of horny epithelium (33). Crocker described this condition as "acute lichen pilaris" and the attempt to establish a new clinical entity commenced. From the outset there was much discussion over the name chosen by Crocker. Colcott Fox took issue over the matter of Crocker's having considered the "spines" pathognomonic by cogently stating that they were a "mere complication of a generalized disease, and were seen in other indolent follicular eruptions—even miliary syphilides." In the course of the next twenty years cases of this malady were described under the name lichen pilaris. However, Crocker in the second edition of his text-book, *Diseases of the Skin* (1893) gives as a synonym for lichen

pilaris, lichen spinulosus (Devergie). This clearly seems to have been an error on Crocker's part, for a search of the literature shows that Devergie at no time used the term lichen spinulosus, nor included in his book a description of any such disease under that title (34). Nonetheless, Crocker's error was carried over into the American texts, and cases subsequently described in this country.

Adamson related in 1905, that when asked, Crocker stated that he could not trace the origin of his having associated Devergie with the name lichen spinulosus (35). It seems not unlikely that the term lichen pilaris was a resuscitation of the original classification of the lichen by Willan. Thus, despite Hebra's attempt at reclassification, the name had been revived.

We can, however, hardly take Crocker to task for becoming enmeshed in the maze of conflicting nomenclature, and even adding to the complexities of the problem. For in 1905, H. G. Adamson made an endeavor to classify under the name " lichen pilaris seu spinulosus " cases of similar follicular keratoses reported under various names (35). He reviewed the twenty English cases which had been reported in the past 22 years (1883-1905) as lichen pilaris, gave the histories of the multi-named French and German cases, and described Italian and Australian cases. He tried to combine under the title he had chosen the acné cornée of Hardy, acné cornée of Guibout, Leloir, and Vidal, the acné cornée en aires of Hallopeau, Barbe's keratose folliculaire (type de Brooke), Audry's case of keratose pilaire engainante, Giovanni's case of acne cornea, and others. As one threads his way through Adamson's review, through the varied literature and minutes of dermatological society meetings, one finds that the confusion and christening and rechristening of similar diseases in large measure depended merely on the chance variations in distribution, elevation and shapes of follicular lesions, upon the ease with which the follicular plugs could be dislodged, and on what type of residual scarring eventuated—all of no importance within themselves. Many times the same case is claimed under various names by different dermatologists.

It might be stated categorically that at some time in the literature of the last quarter of the 19th century, practically all of the multitude of terms seem to have been compared with each other or used interchangeably. The futility of attempting to consider these separate entities as desiderata becomes readily apparent.

While Adamson's attempt to consolidate " entities " did not meet with general approval, and practically speaking he but added and popularized another Latin name, his effort furnished us with several interesting cases

previously unreported. A careful perusal foreshadows our brief observations, possibly of significance from the point of view of a vitamin A deficiency.

We learn that of Radcliffe Crocker's first three cases of lichen pilaris, the first had "two brothers who had died with rickets," the second had "slight rickets and phlyctenular ulcers leaving corneal opacities—the rash had developed ten days before," and the third had developed the skin lesions of lichen pilaris "acutely after scarlet fever." A case is reported by Bennett from Australia (1902) in which a healthy girl of 14 developed the skin lesions of "lichen spinulosus" during a convalescence from influenza. Instances are cited in which cod-liver oil by mouth proved its worth as a curative therapeutic agent in lichen pilaris.

In 1918 and 1919 eruptions of a follicular keratotic nature were described in connection with scurvy (36, 37). Although the possibility of a multiple vitamin deficiency was not considered at that time, it is significant that some of these "scurvy" cases presented night blindness, a symptom of vitamin A deficiency, and that in some the hyperkeratotic follicular lesions existed with no other signs of scurvy, or preceded scorbutic lesions by several weeks or months. In 1753 Lind in *A Treatise of the Scurvy* stated, "Their skin at this time feels dry, as it does through the whole course of the malady. In many, especially if feverish, it is extremely rough; in some it has an anserine appearance; but most frequently it is smooth and shining" (38).

Although the question of relation of follicular keratotic lesions to scurvy is repeatedly raised, no evidence has been adduced to show that such changes in the skin may not be due to a failure in the utilization of vitamin A in the presence of a deficiency in ascorbic acid. All that is known regarding the physiological action of ascorbic acid does not indicate any direct relationship between it and epithelial keratinization, while the action of vitamin A is thought to be specifically connected with the keratinizing process.

Once more the names of pityriasis rubra pilaris, keratosis follicularis, Darier's disease, lichen pilaris and ichthyosis are frequently appearing in the literature—and most often in connection with vitamin A studies. The investigable horizons which have been opened are formidable ones. Perhaps as our knowledge increases, the volume of our nomenclature will appear in inverse proportion. Then, perchance, the historian of a not-too-distant decade will smile at our efforts to trace a disease through the generations since Willan—and having smiled will simply recall the words of Robert Willan, written under similar circumstances, when he

said: "The Greeks have been very particular in describing external diseases of the head, but they mislead us by applying new names to the same disease in different stages of progress."

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ARCHIBALD MENZIES, 1754-1842

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" Describe the structure of a meristematic plant cell and explain . . . ," the young medical student reads despondently through the examination paper in biology and hopes that he may never again have to study his " Botany for Students." The subject is and will probably remain for him an academic one, divorced from any practical expression and unrelated to his medical interests. Such a student can hardly credit the close connection which not so long ago existed between botany and medicine; he does not realise how many 18th and 19th century British naval surgeons began their careers in the Royal Botanic Gardens at Kew or Edinburgh and his course of study has never included a visit to such a garden. Who has told him that many of the trees and flowers which he accepts as indigenous were in fact introduced quite recently by these medical explorers? As he looks at the lupins, paeonies and larkspurs in the garden of his home, the monkey puzzle standing in the centre of the circular lawn, the cypresses and spruces in the parks, does he think of Archibald Menzies? Yet Menzies is particularly worthy of his remembrance for he combined botanical interests with a successful medical practice, whereas many of his contemporary medical botanists either gave up botany or followed it so exclusively that in the case of Sir Joseph Hooker for example it became hard to realise he had once practised medicine.

Archibald Menzies was fortunate in his introduction to botany for in his case " Botany for Students " was replaced by studies from nature, which began in earliest childhood. His birthplace, Styx House, lies four miles west of Aberfeldy on the Tay in Perthshire, and to this day the long low whitewashed house is set among fields and trees. The child whom James and Anne Menzies took to the Weem Kirk for christening on the 15th March, 1754, was a cadet of the great clan whose chief, Sir Robert Menzies of Menzies, 3rd Baronet of Nova Scotia, kept large gardens at Castle Menzies. As soon as the boy had finished his studies at Weem Parish School he went to work in these gardens, where half the staff of twenty-one gardeners was already drawn from the Menzies clan. Sir Robert was constantly introducing new plants and his interest and enthusiasm so inspired four of Archibald's brothers, William, Robert, John and James, that they remained gardeners all their lives. Archibald continued his course as a gardener for some years, but little can he have

thought that one day the familiar Weem Rock would be covered with trees which he himself was to introduce into the country. In time he moved to Edinburgh and worked in the Royal Botanic Gardens where his elder brother, William, was already employed and of which William was later to have charge. It was now that there began the fruitful association with Dr. John Hope (1725-86), Professor of Botany, which resulted in Menzies studying medicine at the university, though he never graduated there.

At the age of 24 he made his first important contact with the outside world for Dr. Hope arranged that he should tour the highlands and Hebrides in search of rare plants for Dr. John Fothergill, F. R. S., and Dr. William Pitcairn. Fothergill had started the garden of Upton at Stratford in Essex, which was to achieve an European reputation. Pitcairn was also developing a great private botanic garden while filling with distinction the office of President of the Royal College of Physicians of London, which he held for ten years. Menzies did not, however, venture to London as a result of this tour, but became assistant to a surgeon in Carnarvon, and in 1782, finding his horizons too narrow, he entered the navy as an assistant surgeon. His desire for travel which botany had stimulated was quickly fulfilled for he was appointed to the " Nonsuch," Captain Truscott, which took part in the desperately-contested Battle of the Saints. Admiral Rodney's victory over the Comte de Grasse on the 12th April, 1782, is recognised as having saved Jamaica, but it is not generally known that it was a ship of his squadron which played a considerable part in the horticulture of that island. It was the capture in June, 1782, by H. M. S. " Flora," Captain Marshall, of a French ship carrying seeds and plants to Hispaniola from the Isle de France, which resulted in the mango being grown there: " the whole collection was deposited in Mr. East's garden at Liguanea where they have been cultivated with great assiduity and success." (12) January 20th, 1783, brought the signing of peace at Versailles and Menzies then joined H. M. S. " Assistance " on the Halifax station. He was now able to visit many of the West Indian islands as well as the east coast of America, and his interest was stimulated by correspondence with Sir Joseph Banks, the patron who after Dr. Hope was to be the most decisive influence in his life. It is not known whether they had already met, but on the 30th May, 1784, we find him writing to Sir Joseph from Halifax and sending him seeds collected in the West Indies and near New York. When Menzies returned to England in August, 1786, he was formally introduced to Banks in a letter from Professor Hope, dated 22nd, August, in

which he wrote that Menzies had " paid unremitting attention to his favourite study of botany, and through the indulgence of the Commander-in-Chief had good opportunities afforded him." (4) Menzies now occupied himself in studying Banks' herbarium, which was in the future to preserve so many of his own plants. This was kept at Sir Joseph's house, 32, Soho Square, a centre of learning which Alphonse P. de Candolle described in 1816 " cette belle bibliothèque de Soho-Square qui est comme la capitale des sciences naturelles," and which our own generation has so wantonly pulled down. Here he had the opportunity to learn much from Dryander, who showed him Banks' Australian collection " with civility and indefatigable zeal " (4) ; he also went to Kew where the seeds he had sent were now growing and where William Aiton, the Director, " received (him) with all his usual hospitality and friendship." (4)

But Menzies' stay in England was brief and through Banks' influence he was now appointed to the " Prince of Wales " Lieutenant Colnett, " a private adventurer, now fitting out at Deptford to go round the world." (4) They set out in September, 1786, and from St. Jago in the Cape Verde islands the following month Menzies wrote to Banks thanking him and adding he would " lose no opportunity in collecting whatever is new, rare or useful in any branch of natural history." (4) By February the following year they had reached the Straits of Magellan and on the 11th Menzies wrote from Staten island telling Banks that he was sending him young plants of *Wintera aromatica* (now *Drimys Winteri*) " at present in flower, (which) everywhere it grows loads the circumambient air with a most pleasing aromatic odor." (4) Menzies was making full use of his opportunities and though the voyage of the " Prince of Wales " was intended to further the trade in furs with the north-west coast of America, it was his activities that have given the little ship any place in history. This voyage lasted nearly three years and in the " Prince of Wales " Menzies completed his first circumnavigation, visiting in addition to the north-west coast, the Pacific islands, New Zealand and Australia, and returning round the Cape with many seeds and plants for Kew. In her he carried out surveying duties and in her he had his first experience of cases of severe scurvy, but he had devoted all his spare time to botany and even during the voyage had sent more than a hundred specimens to Banks, accompanying each with an exact description of the locality where he found it, its identity where he could establish this, and its habitat. On the 14th July, 1789, he wrote to him of his " arrival in the British Channel," (4) in evident anticipation of further pleasant visits to Soho Square. He now had a considerable interval in which to enjoy them,

for it was not till the autumn of 1790 that he was appointed as naturalist to the expedition which George Vancouver was to command. Menzies was shown as supernumerary on the muster books of the sloop " Discovery," being carried as botanist only and provided with a " Botanist's Lieutenant " in J. Ewins, but before the sloop and her consort, the armed tender " Chatham," sailed from Falmouth in April 1791, Menzies had got his warrant as Surgeon (dated 13. 12. 1790) and this was before long to place him in an ambiguous position. For the time being, however, he was able to regard himself wholly as a naturalist and to occupy himself with those interests which had brought him the Fellowship of the Linnean Society as recently as January, 1790, leaving all medical matters in the hands of A. P. Cranstoun, the surgeon of the " Discovery," and his mates G. C. Hewitt, Adam Mill and J. Mears. There certainly seemed no reason to anticipate that he would be called upon to carry out any medical duties when there were so many doctors for a complement of a hundred men, not to mention Drs. William Walker and William Nicholl in the little " Chatham." It seems probable, however, that both Menzies and his patron felt anxious about his position on board under Vancouver, for on the 22nd February, 1791, Banks wrote Menzies detailed instructions as to his duties, including the disposal of his records and collections to the Home Department, and on the following day Lord Grenville forwarded a copy of this letter to the Admiralty. He stressed the importance of impressing on Vancouver that he must provide every assistance to Menzies, such as a boat and working parties, trade goods for bartering with natives, and fresh water for Menzies' plants. Every detail was anticipated and the outcome justified this forethought, particularly in the matter of the care that was to be taken of the glass frame on the quarter deck. But even after these precautions Banks had doubts and on the 10th August, 1791, he wrote to Menzies: " How Vancouver will behave to you is more than I can guess, unless I was to judge by his conduct towards me—which was not such as I am used to receive from persons in his situation." (4) For the moment, however, there were no serious difficulties and Vancouver was able to write: " Botany, however, was an object of scientific inquiry with which no one of us was much acquainted; but as in expeditions of a similar nature, the most valuable opportunities had been afforded for adding to the general stock of botanical information, Mr. Archibald Menzies, a surgeon in the royal navy, who had before visited the Pacific Ocean in one of the vessels employed in the fur trade, was appointed for the specific purpose of making such researches, and had, doubtless, given sufficient proof of his abilities, to qualify him for

the station it was intended he should fill. For the purpose of preserving such new or uncommon plants as he might deem worthy of a place amongst His Majesty's very valuable collection of exotics at Kew, a glazed frame was erected on the after part of the quarter-deck, for the reception of those he might have an opportunity of collecting." (38)

But there were minor difficulties already; as early as March, 1791, Menzies was finding his status on board difficult in connection with messing in the gunroom. He even considered messing in his own cabin, but had to give up the idea owing to the constricted space and the quantity of mess traps this would have involved. He eventually joined the gunroom after an outlay of £90 as his share of their expenses; Vancouver's failure to secure a more equitable arrangement was a grievance to Menzies, even though the captain claimed to have caused the "reconciliation." Cranstoun was already a sick man and Menzies now began to act as surgeon on many occasions; indeed he states that he did so from the start of the voyage, having "among other things constantly prescribed for Capt. Vancouver since we left England," (4) but this voluntary acceptance of such duties was a very different matter from their official assumption. The crisis came when on the 8th September, 1792, Cranstoun had to return home in the store ship "Daedalus" from Nootka Sound in Vancouver island, and two days later Vancouver appointed Menzies in his stead. The fact of formally accepting these duties placed Menzies much more directly under Vancouver's authority and it seems probable that he would have refused had not the captain added to his request that "in case of my not accepting of it, to state my having refused it in writing": (4) moreover on the 9th Vancouver had given Menzies written orders requiring and directing him to take up the charge and employment of Master Surgeon in the "Discovery" in the room of Mr. Alexander Purvis Cranstoun. Vancouver's official account of the matter simply states that Menzies, "who had embarked in pursuit of botanical information, having cheerfully rendered his services during Mr. Cranstoun's indisposition and finding such attention had not interfered with the other objects of his pursuit, I considered him the most proper person to be appointed in the room of Mr. Cranstoun." (38) That Menzies enjoyed the commanding officer's confidence is indicated by Vancouver's choice of him in preference to Cranstoun to attend him when he was ill, and it was Menzies who successfully treated Vancouver's courtly adversary, Juan Francisco de la Bodega y Quadra, when the Commander-in-Chief of the Spanish Mission at St. Blas, California, complained of headaches. But Menzies official medical duties must now have added considerably to his work,

and were quite a different matter from rendering first aid to men who might be wounded by natives when ashore with a boat party, or dealing with an accident on board when a seaman broke his arm through the main top-gallant top-rope breaking, or attending sick natives ashore at Hawaii, where he was long remembered as "the red faced man who cut off the limbs of men and gathered grass." (39) By March, 1795, Menzies was confronted with an ever-increasing number of cases of scurvy and Vancouver himself was now a sick man—he died the following year—so that it must have been a relief to him when on the 2nd October the "Discovery" lay safe in the Thames off Deptford and he could record that only one marine had died from illness, the other three losses during the voyage being due to poisoning from eating mussels in one case and drowning in the others. His satisfaction must also have been considerable as he surveyed his precious boxes of plants and packets of seeds, which were so greatly to enrich the national collections. It is no exaggeration to say that they appreciably altered the English landscape. In this five-year voyage Menzies had studied the flora of South Africa, Australia, New Zealand, the Pacific islands from Tahiti to the Galapagos, and Chile, apart from three extensive cruises off the north-west coast of America where he was the first naturalist to explore its rich variety of cryptogams and where he is perhaps held in higher regard than in his native land. His name is to be found on the map of this coast in various places: Point Menzies was named by Vancouver on Sunday, 19th August, 1792, when they were off Safety Cove, a boat party exploring Puget Sound south of Vancouver island having "pursued a narrow branch of the inlet winding to the south and south-westward, to the latitude of 50° .57′" and then followed "the main branch of the inlet, which is from one to two miles broad, in a north-easterly direction to a point which I called by the name of Point Menzies after Mr. Menzies who had accompanied me and afterwards Mr. (James) Johnstone (Master of the "Chatham") in this excursion." (38) During the exploration of the Columbia river, Menzies island was named after him by Lieutenant W. R. Broughton, the commanding officer of the "Chatham." Today his name has also been given to the principal street of Victoria on Vancouver island and there is a Menzies bay on the western side of the approach to Seymour narrows in Discovery passage, which lies between Vancouver island and Quandra island. Northward of the narrows, where the shores become steep and mountainous and where on the western side they rise to 4000 feet, lie the Menzies mountains. The geographical discoveries had indeed been great and of such enduring importance that they came to overshadow the additions

that the expedition made to the knowledge of ethnology and natural history and the considerable botanical redistribution which it effected. It is on this period in the " Discovery " that Menzies' fame chiefly rests, a period so well-documented that it is not easy to place it in its true relationship to the rest of his life. The full limelight of the botanical world fell on him and it never wholly left him; it is for this reason that it is difficult to place in focus his position as a naval surgeon and later as a private practitioner. Menzies recorded the voyage of the " Discovery " in very great detail in his journal, which is now preserved in the British Museum and of which typescript copies exist in British Columbia and the Linnean Society. Three portions of it have been published, that edited by Dr. C. F. Newcombe covering the period April to October, 1792, during which they were surveying Vancouver island and when Puget sound was discovered, that edited by W. F. Wilson for the three visits to the Sandwich islands during the years 1792-94, and that covering the cruises off California which was printed in the *Quarterly Journal of the Californian Historical Society* (Vol. II, No. 4, 1924). In addition there is Menzies' account of the visit to Hawaii in 1794 which he published in Loudon's *Magazine of Natural History* in 1828-29, while Vancouver published his own account of the whole five-year voyage. Only such aspects of these records will be touched on here as have a bearing on Menzies as an individual and a doctor rather than his status as a botanist. First there is the controversial question of his relationship with Vancouver; at the time of the " Discovery " reaching home, Menzies was in a most embarrassing position for over him hung the threat of court-martial. The train of circumstances that led to this is more significant than the actual occasion from which the charge arose—Vancouver was ill, his temperament was unstable and mercurial and he was suffering from the strain of maintaining discipline under the most testing circumstances of a five-year voyage, throughout which the men had not only been separated from their own country but from the steadying influence of the fleet; there had been no unifying military duties to perform, and the ship's companies had constantly been broken up into boat parties for surveying duties. Vancouver had other causes for vexation which were more personal and connected with individuals in his ship . . . there was for example the Hon. T. Pitt, aged 16 at the beginning of the voyage and with the Hon. C. Stuart, signed on as A. B. but now increasingly resentful of his discipline; and now there was Mr. Menzies questioning his right to transfer one of the men from botanical to ship's duties when he was short of hands owing to scurvy. Vancouver's lack of knowledge of botany or of

interest in the subject must have made him appear prejudiced: to Menzies his glass frame on the quarter deck was the prize of the expedition, to Vancouver it was an unnatural object in a ship and thoroughly unseamanlike. It is easy to understand Menzies' feelings when many plants collected with such difficulty and at that time irreplaceable, were lost because the attendant officially allowed to help him in their care, was removed for watch-keeping duties just as the end of the voyage was in sight. Menzies had charged the man with negligence when on the 27th July, 1795, there was a heavy rain storm and he failed to cover the glass frame, but Vancouver would and could take no disciplinary action having authorised the attendant's employment on other duties. According to Menzies he flew into a rage and was passionate and abusive. Once the quarrel began, causes for disagreement multiplied. Vancouver now demanded Menzies' journals, charts and drawings, giving him an order in writing. Menzies refused to surrender any of his records except the Sick Book, denying Vancouver's right to what he considered was the property of the Secretary of State for the Home Department. Vancouver reported this to Evan Nepean, forwarding Menzies' written refusal, and asked that he should be court-martialled; next day, the 14th September, 1795, Menzies wrote from the Shannon to Sir Joseph Banks telling him he had been under arrest since the day after the rain storm, the charge being "insolence and contempt as it is termed." (4) Vancouver received orders for the court-martial on the 21st September, and for the next month the tension in their relations continued, but whether because the return to the Thames created a new sense of proportion or because Menzies made an ample apology, Vancouver on the 24th October, withdrew his demand for a court-martial and ten days later Menzies officially gave up his duties as surgeon in the "Discovery." Menzies was now free to survey the fruits of his labours with untroubled satisfaction. His travels had added even more to botanical knowledge in general and to British horticulture in particular than even he could realise at the time, but it was already evident that his rich collection of herbarium specimens and seeds from the south-west coast of Australia was of unusual importance, not to mention his researches into the flora of the west coast of America from Alaska to Mexico. He had discovered the redwood of California, *Sequoia sempervirens*, at Santa Cruz; he had been the first to transmit cones of *Banksia* from King George's Sound in Australia and other Proteaceae to Kew; he had brought back a species of ornamental gooseberry (*Ribes speciosum*), the *Abietia Menziesii*, known today as the Douglas spruce (*Pseudotsuga Douglasii*) and perhaps the most

famous and widespread of Menzies' discoveries, the fine Nootka or yellow cypress (*Chamaecyparis nootkatensis*) as well as the Menzies spruce (*Picca sitchensis*). He also introduced the *Arbutus Menziesii*, which is the finest evergreen of northwestern America and was first seen by Menzies on the 4th May, 1792, in the Puget sound region, but under its popular name of Madrona tree is widely known in the western forests. Among his plants there were many humble cryptogams as well as the *Thuya Menziesii* now known as *Thuya plicata*, and *Menziesia ferruginea* of the ericaceous genus dedicated to him by Sir J. E. Smith, who with Robert Brown and Sir William Hooker examined his collection. Apart from what he brought back he had enriched horticulture and agriculture in a great number of the places which the expedition had visited, having taken to them large quantities of seeds and even young fruit trees. Menzies has been deservedly described as " one of the greatest Scottish botantists, explorers and travellers." (1) But though his name has been given to twenty-five plants of the Pacific coast of America and to nineteen in Hawaii alone, it is through the monkey puzzle *Araucaria imbricata* that he is best remembered. When the " Discovery " lay at Valparaiso, Vancouver received an invitation from the governor of Chile, Don Ambrosio Higgins de Valenar, to visit him at Santiago; he took with him six of the ship's officers including Menzies and the party was met at the approaches to the capital by a dazzling array of officials. Undeterred by the sickly appearance of the exhausted travellers, wearied by a ninety-mile ride and in now threadbare uniforms, they mounted them on magnificently caparisoned horses for a public entry into the city; in due course His Excellency welcomed them in a broad Irish brogue to a great banquet, at the close of which Menzies observed some unfamiliar nuts on the table and pocketed a few. He planted these on board and succeeded in bringing back five of the seedling monkey puzzles for Sir Joseph Banks, thus introducing the tree which was to receive so much royal interest and which became the traditional ornament of Victorian lawns. Sir Joseph Banks planted one of the seedlings in his own garden at Spring Grove and sent the remainder to Kew and in 1806 or 1808 at least one tree was considered hardy enough to leave the green house and was planted out, though it was at first protected during the winter months with a temporary frame covered with mats. In 1817 it was reported to have been " irretrievably injured by its presence at a single gala at Carlton House, owing to the servants having very imprudently attached lamps to the branches of the tree." (27) King William presented one of the young trees, when 5 feet high and growing in a tub, to Lady Granville for her garden at Dropmore,

where by 1830 it had reached 60 feet but was said to be rivalled by another at Dropmore " the produce of a cutting stolen by a lady from the original plant at Kew nearly fifty years ago " (10) (sic). This original plant was still in 1840 " the lion of the Gardens, King William, who, in his frequent visits to Kew, never omitted going over the Botanic Gardens, and latterly, when walking became inconvenient, drove through them in a pony phaeton, and at all events looked into every house, delighted to point out the superb tree to such strangers as might be with him." (10) The veteran did in fact survive to 1892, but by then the monkey puzzle had become so common a sight in London gardens that the public had lost interest in it and had long since forgotten Archibald Menzies.

The years during which the young Araucarias grew at Kew were full ones for Menzies, but the Banksian correspondence no longer throws light on his activities. In spite of Banks' and Menzies' mutual interests and long association a certain coolness now appears to have crept into their relations, a circumstance to which the court-martial incident may have contributed. Menzies' record continues but in a very different hand from that of his former patron: Dr. James Carmichael Smyth, F. R. S. was interested in the problems of epidemic disease and its prevention by fumigation, and in 1796 addressed a letter to Earl Spencer on the use of nitrous fumes in destroying contagion and this letter was printed in the form of a pamphlet. It describes an experiment carried out on board the " Union " Hospital-Ship at the request of Their Lordships and also those carried out at the desire of the Russian commander, Admiral Hannikow, on board some ships in his squadron, then anchored off Sheerness. Smyth acknowledges that Menzies undertook the management of the whole experiment, and in fact the entire 75 page report is by Menzies except for Smyth's introductory and closing remarks and some correspondence which is included. The undertaking began on the 26th November, 1795, at a time when the " Union " was daily receiving cases from the Russian squadron and she was grossly overcrowded so that " the sick of every description lay in cradles, promiscuously arranged to the number of nearly two hundred of which about one hundred and fifty were in different stages of a malignant fever, extremely contagious as appeared evident from its rapid progress, and fatal effects, amongst the attendants on the sick, and the ship's company." (35) Menzies, who had arrived at Sheerness the previous day, went on board the " Union " early in the morning of the 26th, closed all ports and scuttles and immersing cups of concentrated vitriolic acid in hot sand held in pipkins, added equal quantities of pure nitre powder. The pipkins were then carried through the wards

until a thick haze had formed. The dirty clothes were steeped in cold water, hung up on deck and then fumigated prior to washing. The whole process took four hours and then the ship was well ventilated. The fumigation was repeated twice daily and in addition he had all empty cradles scrubbed on deck, and made recommendations regarding improvements in the privies which were inboard and opened off the wards. The most immediate and apparent effect of all these measures was to remove the powerful stench from between decks and, since this was generally associated with the idea of contagion, it created an impressive psychological change; but in addition none of the attendants fell sick during this period and none of the sick died. On the 16th December he revisited the ship, where the routine had been continued meanwhile; there had been some deaths, but on a much reduced scale and everyone was more cheerful. He continued to visit Sheerness at intervals till the 3rd February, by which date the epidemic was reported to have ceased. In the interval there had been only two cases among contacts, whereas prior to the fumigation 30 out of 85 of the ship's company of the " Union " had been infected in three months and there had been eight deaths among them. The epidemic can be identified as typhus, but the effectiveness of the nitrous fumes against the lice is questionable in view of the fact that the concentration was low enough to permit of the sick remaining in the wards and surviving their poisonous action. The method was applied in certain Russian ships and considerable success was reported from them, but Menzies, unable to supervise it personally, had difficulty in explaining the technique and met with a number of obstacles which proved insuperable; among his unsuccessful recommendations was the advice to abandon the use of *shubas* which were worn by the seamen with the wool against the skin and must almost certainly have been heavily infested. Menzies' reason for associating them with the epidemic was admittedly olfactory. The method received considerable publicity and the apparently favourable statistics together with the freedom from risk of fire made it popular.

On the 30th November, 1796, Menzies was appointed to the " Princess Augusta " yacht, and remained in her till the 14th May, 1799. This was probably an appointment with only nominal duties which allowed him to spend much time ashore in England. Following this commission there came an appointment to the " Sans Pareil " a week later, but he left her in the middle of June, 1799, and on the 18th joined the " Tamer " for one month. On the 24th July he received his M. D. of Aberdeen, obtaining leave for this purpose from the " Prince of Wales " to which he had been appointed just previously. In her he remained till the beginning of

1800, when he became surgeon once more of the " Sans Pareil." The oft-repeated statement that he was in this ship throughout this period is not correct, though the Admiralty records throw no light on the reason for the various appointments that were given to him between his two appointments to her. He now served under Lord Hugh Seymour in the West Indies, but his name disappears from her books on the 11th September, 1802, when she paid off. It is probable that at this point he was placed on half-pay and began his life as a private practitioner in London. The glimpses we now get of him are rare but indicate that he was a very active and successful doctor, and it is these years that allow him to be claimed by the medical profession, even though his fame rests on his botanical discoveries. From his surviving correspondence between 1805 and 1825 with Sir James Smith, the founder of the Linnean Society, we know that he lived at 6, Chapel Place, Cavendish Square, and that by the spring of 1806 his practice had grown so greatly that he could not extend hospitality to his old friend: " Business has considerably increased since you were last in town, which makes me have more frequent occasion for the First Floor than formerly." (33) Sometimes Smith would send him plants to add to his collection or on which he desired his opinion, and Menzies never lost his interest in or contact with the botanical world. In March, 1808, he refers to using Sir Joseph Banks' library and collections for reference and as late as 1819 Smith was sending him mosses for examination, but of his busy practice we have only the briefest indications. He appears to have been on half-pay from the navy for at least part of this long period and was actually appointed to the " Zealous " on the 31st May, 1805, but six days later this was cancelled when he refused to take up the warrant.

As the years passed Menzies became an increasingly venerated figure in the scientific world; though he contributed no papers or articles he maintained a considerable correspondence and received many vistors. His old friend, Johnstone of the " Chatham," now a retired Captain, wrote to him frequently; he had left England to avoid the rigours of winter and recounted how he had recently exchanged the dirt of the Parisian streets, which offended his naval eye, for the boredom of Versailles . . . he wondered if Bath would be more agreeable. Menzies' name was now well-known to European botanists and in 1822 his international status was recognised when he was appointed a member of the Nature Research Society of Leipzig. In 1824 he was visited at Chapel Place by Dr. Schultes, a professor from Landshut in Bavaria; the learned naturalist spoke of Menzies' " viridem senectutem " and reported that " he is now as active as

a person of forty, and is in great practice as a surgeon." (19) But Menzies still devoted his leisure to botany and botanical draughtsmanship, for which he had some skill, and to the maintenance of his herbarium: "the Cyperaceae and Gramineae, as well as the Mosses and Ferns (the latter are his favourites) are laid out with the utmost care in octavo papers and packed in cases." (13) In 1826 Menzies retired and lived in 2 Ladbroke Terrace, Notting Hill, London. He now delighted in reminiscence and, forgetting how he had once described his three years in the "Prince of Wales" as "a tedious voyage," he would declare himself ready to set off again on another expedition. On the 15th November, 1836, his portrait by Eden Upton Eddis was presented to the Linnean Society by subscribers; it has been reproduced in biographical works by Wilson, by Meany and by Newcombe, and shows him as a fine but ageing figure; his wife Janet, was buried on the 23rd September of that year, aged 66, and he was himself now 82. Of Mrs. Menzies nothing is known, but Newcombe reproduces a charming miniature of her as a young woman, which is preserved by Menzies' family.

When no longer able to practice and in the loneliness of these closing years, Menzies could draw on a rich store of experiences and interests: mountain climbing and bird-watching, the collection of natural history specimens, the problems of horticulture, the taboo system of Hawaii, the salmon rivers of Alaska, his youthful ventures at surveying, they could all provide material for discussion. He sometimes visited the Hookers at Kew and Eddis made a coloured crayon drawing of Menzies for them, but his expeditions were all short ones now. The last recorded description of Menzies comes from Professor W. H. Harvey, keeper of the herbarium at Dublin, who recalled him as a venerable figure "one of the finest specimens of a green old age that it has been my lot to meet," and wrote how he "to the last could recall with vividness the scenes he had witnessed, and loved to speak of the plants he had discovered. His plants, the companions of his early hardships, seemed to stir up recollections of every circumstance that had attended their collection at a distance of more than half a century." (13) Menzies had an infectious enthusiasm and Professor Harvey admitted that it was he who first "possessed me with a desire to explore the American shores, a desire that has followed me through life."

Menzies had no children, and after his wife's death he must have found increasing companionship in his plants, marking in his herbarium their names and localities. He still extended hospitality, kindness and encouragement to the new generation of botanists, maintaining a correspondence

with such young men as David Douglas (1798-1834) and John Scouler (1804-71), who had gone to the Columbia river in 1825 and with both of whom he had links through Douglas' association with his native Perthshire and Scouler's medical duties in ships of the Hudson Bay and other companies. But Douglas was killed in the Sandwich islands in 1834 and the remaining six years after Mrs. Menzies' death must at times have been very lonely ones for Menzies in a world where the whole character of society had changed and so many established ideas were now suspect. He died at Ladbroke Terrace on the 15th February, 1842, leaving his beloved specimens to the various national collections; he himself lies in a depressing London cemetery, but the whole countryside of England and Scotland keeps his memory green.

ACKNOWLEDGMENTS

My thanks are due to Lord Amulree, R. Bayne-Powell Esq. and Dr. E. Ashworth Underwood for much valued assistance, and to the staffs of the Admiralty and Linnean Society's libraries. I am also grateful to A. N. Balfour Esq., for the loan of the Menzies papers in his possession.

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SPECIMENS OF THE DENTAL ART IN ANCIENT PHOENICIA (5TH-4TH CENTURY B. C.)

MILTON B. ASBELL

The dental art of the ancient Phoenician civilization is known to us through archeological evidence alone. At the present time archeological research has given us only two specimens of dental prosthesis which will be identified by their respective discoverers as the Gaillardot and the Torrey specimens.

The Gaillardot specimen (Figs. 1 and 2) is the earlier of the two in the point of discovery having been found in May 1862 by Dr. Gaillardot, a member of the Renan mission to Phoenicia, at the necropolis of Sidon which is present day Saïda (Republic of Lebanon). Today, it may be found in the Department of Oriental Antiquities of the Louvre Museum, Paris.

The record of this find appears in the report of Renan [1] as follows:

. . . Mais ce qui est le plus intéressant, c'est une portion de mâchoire supérieure de femme, présentant les deux canines et les quatre incisives réunies par un fil d'or; deux de ces incisives paraissant avoir appartenu à un autre sujet et avoir été placées là pour remplacer celles qui manquaient.

Cette pièce, trouvée dans un des caveaux les plus anciens, prouve que l'art du dentiste était assez avancé à Sidon; elle prouve aussi que le scorbut de terre, si commun aujourd'hui à Saïda, existait déjà autrefois.

Translation:

But that which is the most interesting is a portion of an upper jaw of a woman, showing the two canines and the four incisors united by a gold wire; two of these incisors appear to have belonged to another subject and to have been placed there in order to replace those which were missing.

This fragment, found in one of the most ancient vaults, proves that the art of the dentist was rather advanced at Sidon; it proves also that scurvy, so common today, already existed formerly.

The appliance consists of a fine gauge pure gold wire encircling and entwining the lower right cuspid and left central and lateral incisors and cuspid. The lower right central and lateral incisors are human teeth of another individual which have had two holes bored labio-lingually in each; one near the incisal edge and the other several millimeters gingivally near the necks of the teeth. The wiring commences at the distal surface of the

[1] Renan, Ernest, *Mission de Phénicie*, Paris, 1864, pp. 472, 473.

Fig. 1. The Gaillardot specimen. Labial view showing the gold wire retentive prosthesis of the six lower anterior teeth supporting artificial replacement (with human teeth) of the right central and lateral incisors.

Courtesy: Department of Oriental Antiquities, The Louvre, Paris.

Fig. 2. Same as Figure 1; showing the lingual view of the Gaillardot specimen.

Courtesy: Department of Oriental Antiquities, The Louvre, Paris.

right cuspid and completely encircles the teeth three times at their necks. It then runs interproximally between the right cuspid and pontic embracing all the strands labially and lingually; continuing it passes through the gingival hole of the substitute right lateral incisor and after circling the gold strands on the lingual aspect it returns running across the end of the coronal stump enmeshing the gold strands on the labial. This is then repeated on the right central incisor. The wire then passes around the lingual neck of the left central incisor to pass through interproximally to it and the left lateral incisor, encircling the gold strands labially, and returning through the same embrasure to be repeated at the succeeding interproximal space; however, at this juncture, the gold wire encircles the gold strands both labially and lingually. Having passed around the neck of the left cuspid on its lingual surface, the wire is folded under and abruptly ends. A separate gold wire twice passes through both incisal holes of the pontics to be tied together and rest upon the lingual surface.

Fig. 3. The Gaillardot specimen as represented in: Renan, Ernest, *Mission de Phénicie*, Imprimerie Impériale, Paris, 1864, p. 472.

However, it was not until over two decades had passed (1886) that this most important discovery was reported to the dental profession by van Marter.[2] And, from this date to the present arose the question as to whether this specimen was one of the lower jaw or of the upper; for we have the problem of the original report identifying it as an upper whereas the specimen itself, by dental anatomical standards, appears to be of the lower jaw. The artist who made the diagram of the appliance contained in the report by Renan (Fig. 3) apparently was not primarily concerned with the question whether it be of an upper or lower jaw but rather with the text of the report. A cursory examination of this diagram will show (a) that it is not drawn anatomically or to scale but is merely a sketch, (b) that it represents an upper jaw (six anterior teeth) and (c) that the artificial teeth of the appliance appear on the individual's left side. The description of this specimen as that of an upper jaw was reported by

[2] van Marter, J. G., Further Evidence of Pre-historic Dentistry, *Independent Practitioner*, *7*: 57 (February) 1886.

Farrar (1888),[3] Guerini (1894),[4] Deneffe (1889)[5] who copied the illustration of Guerini but reversed the drawing (see Fig. 4), Lemerle (1900)[6] and Godon (1901)[7] who cites Deneffe.

Guerini subsequently (1909)[8] attempts to establish the fact that it was an upper jaw by redrafting the sketch to make it appear more accurate anatomically; but he was corrected by Kirk[9] who refutes this as follows:

> The incisors represented in the cut of Renan's work do not at all give the anatomical form of upper incisors, but of lower ones. Therefore, either the figure itself has been badly drawn, or the piece found by Dr. Gaillardot was part of the inferior and not of the superior jaw. In the latter case, the figure in Renan's book ought to be reversed.

He then proceeds to reverse the drawing. Here, one must weigh this statement against that in the text of Renan's work where it specifically states: "C'est une portion de mâchoire supérieure de femme" (this is a

Fig. 4. The Gaillardot specimen as erronously copied from Renan.

portion of an upper jaw of a woman). For it was this perhaps more than any other statement which has given to the history of dentistry the present day acceptance of this specimen being that of a lower jaw. This is shown by the following reports of medical and dental historians who all have supported this statement. Sudhoff (1926)[10] who is regarded as one of the greatest medical historians of the present century, in his text *Geschichte der Zahnheilkunde* exhibits a modern reconstruction of this appliance showing it as a lower with artificial substitutes on the lower right side; Weinberger (1926)[11] copies Renan's sketch reversing it from an upper to a lower and causing the pontics to appear on the right side;

[3] Farrar, J. N., *Irregularities of the Teeth*, New York, *1*: 35, 1888.
[4] Guerini, Vincenzo, *L'Odontologie*, July, 1894.
[5] Deneffe, Victor, *La Prothèse dentaire dans l'antiquité*, Anvers, 1899.
[6] Lemerle, L., *Notice sur l'histoire de l'art dentaire*, Paris, 1900, fig. 9, opp. p. 8.
[7] Godon, Charles, *L'évolution de l'art dentaire*, Paris, 1901, p. 41.
[8] Guerini, Vincenzo, *A History of Dentistry From the Most Ancient Times Until the End of the Eighteenth Century*, Lea & Febiger, Philadelphia, 1909, pp. 29-31.
[9] Kirk, E. C., cited *ibidem*, p. 30.
[10] Sudhoff, Karl, *Geschichte der Zahnheilkunde*, J. A. Barth, Leipzig, 2nd ed., 1926, p. 34.
[11] Weinberger, Bernhard W., *Orthodontics, An Historical Review of Its Origin and Evolution*, The C. V. Mosby Co., St. Louis, I, 1926.

Ginestet (1927)[12] repeats the same; Brown (1934)[13] misquotes Renan; and in the same year Weinberger[14] published a photograph showing the appliance to be a lower. However, Weinberger added to the confusion when in 1940[15] he exhibited a photograph of the appliance as an upper in a series entitled: "Order of Evolutionary Development in Dental Prosthesis" but in 1946[16] and 1947[17] demonstrated this specimen as that of a lower jaw where the artificial teeth appear on the individual's left side and further added that this is a "type of retentive prosthesis supposedly of Phoenician origin but probably of Egyptian." As late as 1935[18] and 1947[19] Casotti repeats earlier dental authors.

However, it was Filderman (1931)[20] who was to establish the identity of this appliance in regard to its being one for the lower jaw. He examined the specimen at the Louvre Museum in Paris, traced the wiring of the teeth and made numerous measurements of the individual teeth and artificial substitutes. The one outstanding point of evidence was that the labio-lingual measurements of the teeth at the necks were greater than those mesio-distally which indicates teeth of the lower jaw. As a result of this study, he is convinced that this appliance represents one for a lower jaw, Renan notwithstanding.

A close examination of the photographs reveals the ingenious triple-thread banding of the teeth, the intricate method of ligating each tooth and the clever fixation of the pontics; it is truly a remarkable piece of dental work when we consider it was made during the 4th Century B. C.

In the case of the second appliance, the Torrey specimen (known in the Near East as the "Ford specimen") (Figs. 5 and 6), we do not have to wait over eight decades to fix positive proof for the establishment of

[12] Ginestet, F., Prothèse de contention chez les Phoéniciens, *Rev. Stomat.*, *29*: 12, 1927.

[13] Brown, Lawrence Parmly, The Antiquities of Dental Prosthesis, *Dental Cosmos*, *76*: 828, 1934.

[14] Weinberger, Bernhard W., Ancient Dentistry in the Old and New World, *Annals of Medical History*, *6*: 264, 1934.

[15] Weinberger, Bernhard W., Did Dentistry Evolve from the Barbers, Blacksmiths or from Medicine, *Bulletin of the History of Medicine*, *8*: 965, 1940.

[16] Weinberger, Bernhard W., Further Evidence that Dentistry Was Practiced in Ancient Egypt, Phœnicia and Greece, *Bulletin of the History of Medicine*, *20*: 188, 1946.

[17] Weinberger, Bernhard W., The Dental Art in Ancient Egypt, *Journal of the American Dental Association*, *34*: 170 (February 1), 1947.

[18] Casotti, Luigi, Evoluzione della protesi dentaria, *Acta Medica Italica*, *1*: 30 (December), 1935.

[19] Casotti, Luigi, L'Odontotecnica delgi Etruschi, *Rivista Italiana di Stomatologia*, *2*: 668, 1947.

[20] Filderman, Jacques, Notice sur une prothèse fixe, datant d'avant J.-C., *La Revue Odontologique*, *52*: 335-343, 1931.

Fig. 5. The Torrey specimen. Labial view showing gold wire prosthesis of the six lower anterior teeth.

Gift of Dr. Charles C. Torrey.

Fig. 6. The Torrey specimen. Same as Figure 5 showing the technique of wiring by the removal of the lower central incisors.

another specimen of the dental art of ancient Phoenicia. In 1901 the first project of the American School of Oriental Research was the excavation of Phoenician rock tombs in an open field a little more than a mile southeast of Saïda[21] and in close proximity to the locale of the Renan expedition. It was here that Dr. Charles C. Torrey (Yale University)[22] discovered the specimen in a sarcophagus of a Phoenician grandee (Fig. 7) which he describes as follows:

> Numbers 8 and 9. Number 9 is the sarcophagus of a woman presumably the wife of the occupant of Number 8.
>
> Number 8: . . . Length 6′ 11½″ . . . the weight of this sarcophagus covers approximately half a ton . . . in this sarcophagus was found a seal ring of gold of excellent Greek workmanship, also the specimen of dentistry, and the remnant of linen cloth. . . .

Torrey further notes the teeth of Phoenicians of the 5th-4th Centuries B. C. were well preserved and usually showed a full complement. The appliance is described as follows:

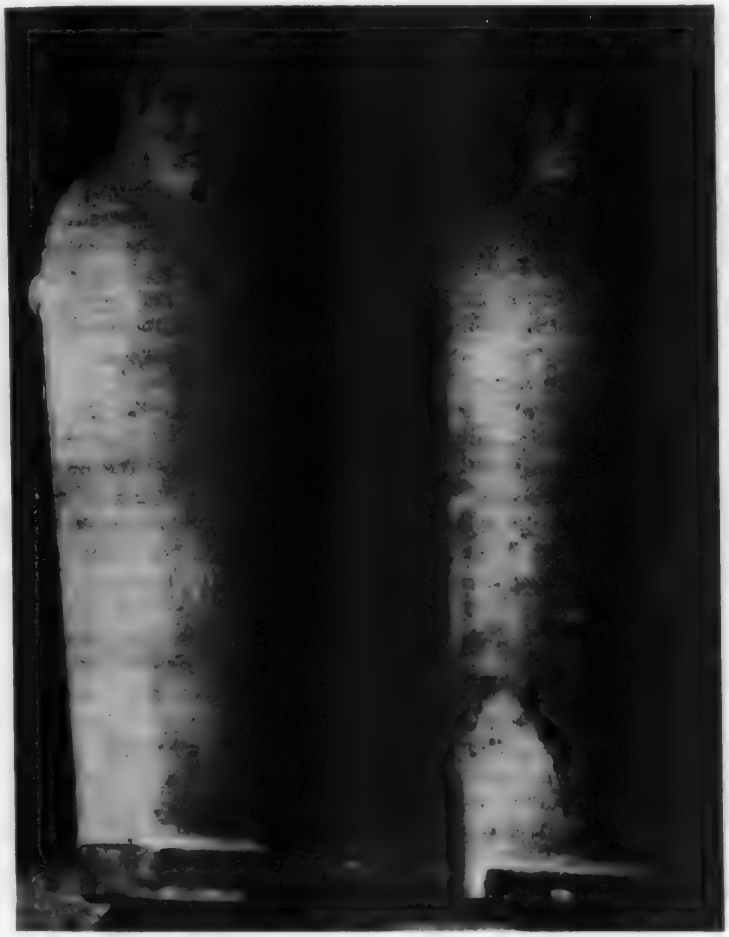
> . . . All the more interesting was a remarkable bit of dentistry which had been performed on the grandee who was buried in Anthropoid 8. He had suffered from *pyorrhea alveolaris* (as dentists have assured me on the evidence of the photographs) and several of the lower front teeth were badly loosened. His dentist had thereupon undertaken to make a "bridge" of gold wire, using the sound teeth on either side as pillars; and the device whatever else might be said of it—was certainly successful in its main purpose of holding the teeth securely in place.

The specimen is now in the Archeological Museum, American University of Beirut (Republic of Lebanon) and it is dated about the early 5th Century B. C.

It "consists of a fine 24 gauge wire of pure gold ingeniously woven around and firmly binding together the six anterior teeth of the lower jaw . . . (the technique) was to take two complete turns with the gold wire around the group of six anterior teeth beginning at the left canine. Coming back to the starting point with the second turn of wire (passing) it through a loop on its free end and then doubling back making a knot very similar to a 'Bowline on a bight.' . . . From this knot the wire passed inward through the interproximal space between the canine and the first approximating tooth to its right (left lateral incisor). As it passes through this space it curves downward, no doubt, below the gum in life. Circling the next tooth it rises through the interproximal space.

[21] Miller, Madeleine S., *Footprints in Palestine*, Fleming H. Revell Co., New York, 1936.

[22] Torrey, Charles C., A Phoenician Necropolis at Sidon, *The Annual of the American School of Oriental Research, 1919-1920*, New Haven, I, 1920, pp. 14, 15, 21.



Sarcophagus 8 Sarcophagus 9

Fig. 7. Sarcophagi numbers 8 and 9. It is in Sarcophagus 8 of a Phoenician grandee that the appliance was discovered.

From: Torrey, Charles C., "A Phoenician Necropolis at Sidon," The *Annual of the American School of Oriental Research in Jerusalem*, Vol. 1, 1919-1920, New Haven, 1920, p. 20.

making a similar curve upward from the level of the double retaining wires to as near the points of contact as possible, thus bracing each tooth interproximally over a surface nearly one-half of its full length. The wire continues thus weaving in and out in a counter clockwise direction until the interproximal spaces excepting the last have been reinforced. Here due to either the existence of a natural brace, or more likely due to a shortage of wire, the appliance ends with a sort of 'half hitch' around one of the retaining wires." [23]

Clawson appears to be the first author to report this find in dental literature in 1933 [24] and 1934 [23] identifying it as the "Ford specimen" in honor of Dr. Ford, American physician of Saida and under whose will the specimen was bequeathed to the Archeological Museum wherein it now reposes. Weinberger (1947) [15] in his report merely cites Clawson. However, credit should be due to its discoverer and it should, therefore, be recognized as the Torrey specimen.

Here, then, is another specimen of the lower jaw of a design and craftsmanship so similar to that of the Gaillardot one that we could almost suspect a primitive system of dental prosthesis. And yet, who fashioned them? Whence came the knowledge and skill resulting in such dental work?

Torrey in commenting upon the specimen writes to the author, "I should doubt whether there were professional dentists in ancient Phoenicia; there was hardly sufficient need of them. But there certainly was a dental *tradition* covering such cases as the present, well known to the Phoenician physicians." He adds that the Greek and Egyptian influences were strong at Sidon during this early period, particularly in the plastic arts. Clawson holds that the Phoenicians borrowed only their knowledge of dental therapeutics from Egypt and passed on her prosthetic skills to Greece and Etruria. Weinberger [16] concludes that "instead of ancient Egypt not having dental practitioners and some idea of dentistry it was she who passed her combined knowledge along to other Mediterranean peoples." However, we can not yet know whether the physician upon occasion acted as dentist or dental mechanic or whether this prosthesis was the result of the handicraft of some skilled artisan.

To conclude, the writer has attempted to record for dental history an authentic account of the two extant specimens of the dental art in ancient

[23] Clawson, M. D., Phoenician Dental Art, *Berytus, 1*: 23, 1934.

[24] Clawson, M. D., A Phoenician Dental Appliance of the 5th Century B. C., *Transactions of the American Dental Society of Europe*, 142, 1933; A Phoenician Dental Appliance of the 5th Century B. C., *The Dental Magazine and Oral Topics, 50*: 1032 (October), 1933.

Phoenicia to be known by their discoverers, viz., the Torrey specimen which exhibits a method of preserving diseased teeth, dating from the 5th Century B. C., and the Gaillardot one showing the replacement of missing teeth by a retentive prosthesis dating from the 4th Century B. C. Here, then, is recorded a segment of the history of ancient dentistry as revealed by the pre-Christian Phoenician civilization.[25]

[25] I wish to acknowledge my thanks for invaluable assistance to Dr. George B. Denton (Northwestern University) and Miss Barbara Rabkin (University of Pennsylvania).

TEXTS AND DOCUMENTS

NEWLY DISCOVERED LETTERS CONCERNING WILLIAM BEAUMONT, ALEXIS ST. MARTIN, AND THE AMERICAN FUR COMPANY

HENRY D. JANOWITZ

Alexis St. Martin was probably the most difficult if not also the most celebrated human experimental subject in medical history. The exasperating tribulations undergone by William Beaumont in his attempts to secure the cooperation of St. Martin are common knowledge. What is not so well known is Beaumont's association with the American Fur Company, an association which enabled Beaumont to complete his classic work on gastric juice and the physiology of digestion. The reprinting of Jesse Myer's "Life and Letters of Dr. William Beaumont," upon which I have drawn heavily for biographical detail, serves to emphasize the good offices of the American Fur Company in obtaining Alexis St. Martin for Beaumont.

The recent publication by the American Historical Association of the Calendar of the American Fur Company papers has made possible the discovery of ten letters, apparently unavailable to Dr. Myer, dealing with William Beaumont and Alexis St. Martin. These documents, all of which date from the year 1839, provide vivid first-hand evidence of the close relation which existed between the army doctor and the officials of the American Fur Company. Scattered among the day-to-day business, fur transactions, and current political and economic speculations, the letters illustrate the high esteem in which Beaumont was held, the exhausting and exhaustive efforts which he made in order to obtain St. Martin for continued study, and the human problems which he faced in this crucial experimental subject,—"his patent digester." They also show the genuine interest in his work and the appreciation of its importance which was manifested by these former frontier traders and trappers. The letters, part of the collection of the American Fur Company's papers, are in the possession of the New-York Historical Society, which has very graciously granted permission to publish them.

In 1809 John Jacob Astor had conceived the audacious plan of capturing complete control of the fur trade of the entire northwest America by establishing a large fur-trading center at the mouth of the Columbia River, with a chain of smaller posts along the Columbia and Missouri

Rivers. He had sent out overland and marine expeditions which secured American control of the mouth of the Columbia River and in 1812 established Astoria, only to see the post fall into British hands during the War of 1812. With it his dream of empire collapsed. But Astor rejuvenated his American Fur Company and in 1817 established its headquarters in Mackinac, a small island in the straits at the junction of Lakes Michigan and Huron in Michigan territory. A young Scotsman, Ramsay Crooks, who had been second in command during the land expedition to Astoria, was then general director of the company, and William Morrison was looking after its Canadian affairs.

It was to Fort Mackinac that William Beaumont was ordered in 1820 when he was recommissioned in the United States Army, after he had spent a short period as a civilian doctor after the War of 1812. Until he was transferred to Fort Niagara in 1825 he was the only doctor, military or civilian, for more than three hundred miles around the trading post and fort. Thus it was that he was summoned on June 6, 1822, to treat Alexis St. Martin, a French-Canadian voyageur of nineteen years just down the lakes from Montreal in the employ of the American Fur Company. St. Martin had received the accidental discharge of a shotgun in his left side while standing in the retail store of the American Fur Company. Beaumont treated, nursed, and housed him privately for three years until the doctor's transfer to Fort Niagara. At this time, in 1825, while Dr. Beaumont was enjoying a short leave in Plattsburgh, St. Martin disappeared. Beaumont had just begun to make a few observations following his first published report of the case. Following St. Martin's disappearance, Beaumont had urged his friends in the American Fur Company to be on the lookout for him. Some two years later, in the winter of 1828, W. W. Matthews, whose duty it was to go into the interior of Canada for the purpose of employing voyageurs, wrote to Dr. Beaumont, "I succeeded in finding your ungrateful boy, Alexis St. Martin. He is married, and lives about twelve miles back from Berthier at a place called La Chalaupe. . . . The distance from Montreal to where he lives is fifty-seven miles." In the meantime Beaumont had been transferred to Fort Crawford near Prairie du Chien on the Upper Mississippi, Michigan territory, and in August 1829 through the efforts of Ramsay Crooks, W. W. Matthews and William Morrison, Alexis was transported from Canada to Fort Crawford. From that time until August 1832, St. Martin remained with Beaumont, and the bulk of the experiments was completed at Prairie du Chien. It was here that Beaumont met Hercules L. Dousman, an official of the American Fur Company's Western Outfit, who in

his capacity as notary public, had executed the deed on Beaumont's property at Prairie du Chien. Beaumont published his book in 1833 at Plattsburgh, and Alexis was permitted to go to Canada to see his family. He was expected to return to Plattsburgh, however, the following June. He never reappeared—despite the many years that Beaumont spent in trying to get him to return.

In 1839, the year of the letters here published, Beaumont was stationed in St. Louis. The American Fur Company's charter had been transferred in 1834 to Ramsay Crooks, following John Jacob Astor's retirement. Crooks became president of the concern, with headquarters in New York City. Dousman had continued as an agent of the western branch at Prairie du Chien, and Morrison was living in retirement in a small estate near Berthier.

The letters written by Ramsay Crooks from the New York office are copies contained in bound letterpress volumes. They are indicated by *L. B. C.*, with the volume and page numbering. The letters received by the New York office are holographs. The item number is as listed in the Calendar of the American Fur Company papers.

The first letter is transcribed in toto to give some indication of the variety and detail of the papers as a whole. Excerpts relating to Beaumont and to St. Martin are extracted from the remaining nine letters. All are transcribed verbatim and literatim. The negligent punctuation and idiosyncratic spelling are reproduced exactly. Omissions and conjectures are indicated by the customary symbols.

[Item number (5860)—L. B. C. 9: 231-233]

Office of the American Fur Company
New York 25 March 1839

Hercules L. Dousman, Esq.
Prairie du Chien

Dear Sir:

Referring to the annexed copy of our last respects of 7 instant we have now the pleasure to own yours of 15 ulto: which came to hand 7 days ago with Denton's offer on Lentilbon & Co., $2678, which was collected and placed to the credit of Western Outfit 1838, on the 19 instant.

Our former letters will have advised you that all trouble with Mr. Astor about the money accruing from the Sioux & Winebago Treaties of 1837, was at an end, Mr. Robert Stuart's wishes to the contrary notwithstanding, and you will also have seen by our letters of 7th instant, that we collected and divided the amount of Certificate No. 8 of the commissioners under the Sioux Treaty, Mr. Astor being paid his proportion under our agreement with him, and which he received,—thus confirming the arrangement.

We confirm all we have said since my return here in relation to muskrats, and hope you will still make a good collection this spring; for though the demand has slackened of late, they will no doubt be used again to at least a moderate extent, and perhaps extensively when trade revives more strongly, if we can afford to furnish them at low prices, as I presume we shall.

We hope you will have been able to buy agood deal of Lea[d] [?even] at 4¢. It is worth $6 for 6½ pounds here now, 6 months; with every prospect of its continuing to maintain itself—If you succeed, you will of course advise the amount of the investment that we may effect insurance in due order.

We shall with much pleasure exert ourselves to engage Alexis St. Martin for our much esteemed friend Doctor Beaumont, and shall if we succeed send the man to St. Louis via your place and to your individual address.

In transmitting the annual papers of Western Outfit we omitted to furnish the results of our examination of the errors that apparently exist in the invoices of foods $\frac{\text{I}}{\text{AMF}}$, $\frac{\text{III}}{\text{AMF}}$, and $\frac{\text{V}}{\text{AMF}}$ — You will now find it enclosed, and will see that every thing is satisfactorily explained, and that the discrepancies were not real, but produced by the incorrectness of the copies sent you.

We would have acknowledged earlier the receipt of your last favor, but hoped to hear something (decided) to communicate about the Winebago Treaty—Nothing new has reached us yet from Washington, and Judge Doty who is now here, confirms the report that the War Department is resolved to appoint new Commissioners to reexamine and determine anew who is to receive the $150,000 set apart for the payment of the traders claims.

There is no doubt that all sorts of Furs, and also Deer skins, will continue to sell well in England, and we request you will purchase everything

in your country, be the price a little more or less—Don't let them go into other hands. I am—

Yours very truly,
Ramsay Crooks
President, Am. Fur Co.

P. S. The goods procured in this country for Western Outfit will probably leave here today for New Orleans—that is, all except the [ ], goods from Canada, which will in due order go forward via Green Bay—The articles ordered by yourself, Mr. Rolette, and Mr. Libby, for your private a/o, accompany the outfit supplies—Your English goods ought to be here before long—yours as before

R. C.

[Item number (5877)—L. B. C. 9: 245-246]

Office of the American Fur Company
New York 27 March 1839

Messrs. Vallee Boyer & Co.
Montreal

Dear Sirs:

. . . We beg your attention to the enclosed for Mr. Beaulieu, and remain, Dear Sirs

Very Respectfully
Your ob. Servant
Ramsay Crooks
President, Am. Fur Co.

We leave the letter for Mr. Beaulieu open for your perusal, and beg your assistance in persuading Alexis St. Martin to go to St. Louis—He will be well treated, and punctually paid by Dr. Beaumont who is a very respectable man, and a kind master—R. C

[Item number (5878)—L. B. C.—9: 247-248]

Care Vallie Boyer & Co.

Office of the American Fur Company
New York 27 March 1839

Mr. Clement Beaulieu
Maskenonge Lower Canada

Dear Sir:

. . . Annexed is a letter from Doctor Beaumont of the United States Army who was formerly at Mackinac. We are very anxious that you

procure for him the man he wants, and if you think the assistance of Mr. William Morrison of Berthier necessary in this business, he will no doubt aid you, as I presume the Doctor has written to him on the subject. You will lose no time in finding out this Alexis St. Martin, and you will be guided by Dr. Beaumont's instructions in the arrangement you make with him, in doing which I recommend that you consult Mr. Morrison—You will observe it is desirable that he leaves his family in Canada, and in that event it will be necessary to make some provision for them.

[*Half page blank here*]

The Doctor is exceedingly anxious to get St. Martin, and you will at once engage him if he is at all reasonable; otherwise you will write us without delay and wait for an answer before you close with him. But if he will engage, you must get assurance that he will not draw back as he did before—We intend you to take him up to St. Mary's—I am Respectfully yours,

Ramsay Crooks
Am. Fur Company

[Item number (5894)—L. B. C. 9: 260-261]

enclosed to Vallie Boyer & Co.

Office of the American Fur Company
New York 30 March 1839

William Morrison Esq.
Berthier, Lower Canada

Dear Sir:

We have received a letter from our old and mutual friend Dr. William Beaumont of the United States Army, who is extremely desirous of obtaining the services of Alexis St. Martin, the man who was shot at Mackinac, and has still an opening in his body, where the wound never closed.

The Doctor wishes St. Martin to go up with our people this spring, and I have written Mr. Clement Beaulieu to engage him—a copy of the Doctor's letter to me has been furnished Mr. Beaulieu for his guidance, and perhaps you also have heard from him on the subject. We should like much to oblige Dr. Beaumont, & should Mr. Beaulieu need your assistance in the matter, I am sure you will take pleasure in giving an old friend your valuable aid—In case the Dr. has not written you, his wishes will be better understood by referring to his letter referred to above.

Ramsay Crooks
President
Am. Fur Co.

[Item number (5934)—L. B. C. 9: 290-308]

Montreal 3 April 1839

Ramsay Crooks Esquire
President Amer. Fur Compy.

Dear Sir:

. . . In our letter of today to Mr. Beaulieu we enclosed your letter on the subject of engaging Mr. Alexis St. Martin for Dr. Beaumont of St. Louis, & we have hopes that he will use every effort to accomplish the earnest desire of Dr. Beaumont. Nothing shall be wanting on our part to afford every assistance in our power. . . .

Your obt. Servants
Vallie Boyer & Co.

[Item number (5969)—L. B. C. 9: 349]

Berthier 6th April 1839

Ramsay Crooks Esq.

My dear Sir:

Your favour of the 30th ultimo has been received—Our good old friend Dr. Beaumont has been in communication with me for several years past concerning Alexis St. Martin. In his last letter he mentioned of having written to you for his and his family's passage to McKinac —thence to the Basin—I have seen Clement Beaulieu who will have no objections in complying with your directions. Still he foresaw some difficulty in giving the passage to a family. After a long search St. Martin was found. both he and his wife came to me—who agreed to go and join the Dr. at St. louis—but not by the route prescribed by the Dr. they agreed to go up by the Lakes to Cleaveland—thence to St. Louis, and would have this without any engagement relying upon the *Dr* for making the arrangement he might think the most proper. in Consequence of their decition I have written to the *Dr* stating to him their desire of going up by the Lake route—and by his ordering one hundred dollars to be paid them—that they would start at once. Alexis & wife have since made arrangements to leave—their farm has been leased out for a term of years—Besides security will be taken for the money they may receive—Upon the whole the Lake route will become as cheap. The opportunities on the Lakes is now so quick that Deck Passages is a mere trifle—Perhaps AMFCo will have to adopt the same route for their recruits there? River is now too far settled and too many shantys to pass with men for the

Western country. . . . It is now difficult to get canoes made the old mode of travelling in them is out of date. The Dr. will be satisfied with your kindness in giving the necessary orders for taking up St. Martin and if he does not go up with your men—it is for want of compliance on the part of St. Martin. St. Martin has still his side in the same state—and in his situation it can not be supposed that he can well be classed as a voyageur—Should the *Dr.* think fit to have his old man for future experiments—he can have him by sending him—the means $100 is little enough the man is poor—and bare of clothing for the voyage—his family consists of wife & 3 children. . . . I Remain My Dear Sir evr

Yours truly
William Morrison

[Item number (6006)—L. B. C.—9: 367-368]

Berthier 12 April 1839

Ramsay Crooks Esq.
President Am. Fur Co.
New York

Dear Sir:

I have just come back from this place in search of Alexis St. Martin, of which I have succeed in finding him. and in a very poor situation after conversing with him about his going up with me; I find out that his wife will not let him go up alone She told me that Alexis St. Martin will not leave this place unless she is with him, and his family. I have offered her to get her a house and provision. and closing to the amount of $80. for this year. and after Alexis St. Martin could arrange the matters with Dr. Beaumont for another year. She said that she will not take any price to remain in Canada without having her husband. and there wishes are not to go up by canoes. But by steamboat they have written to Dr. Beaumont to send them $100 to pay there passage up. I think, sir, in sending $100 will not start them from this place; or at least they not go far from this, he and his family are perfectly necket and they want at least $60 to rig them up . . . and the balance will be to small to convey them to St. Louis. I think myself that one hundred dollars will not take them further than Buffalo, including there closing and by your order, Sir, I think it would be necessary to advise some of your agents at Buffalo when he gets there to forward him and his family to St. Louis. (If the Dr. Beaumont send him $100) my opinion Sir it is a great risk to give

St. Martin $100 in his hand in Canada first thing they will do, when he get the money, is to close himself and his family and as he is a Drunkard he may spend the rest before he start from this place, and then remain again as he did before.

My opinion, Sir. to start this man would be to advance $100 (No more) and not let Alexis St. Martin have any; to appoint a man as Mr. W. Morrison or others; of your agents to take them to Montreal and from there put them in the line as far as Buffalo—St. Martin had seen Mr. Morrison when he had decided on not going by the canoe route. Mr. Morrison wrote to the Doctor and to you about it, it was understood that A. St. Martin and family would start with 4(0) but seeing there poverty—I do not think that it will be sufficient—and In case of failing (by the forwarders) I recommand $60. *more to be paid* on the way by your *order*—Sir I have taken $50. already from Messrs. Vallee Boyer & Co. and have send for $30. more for the advances of the men that I am engaging for the A. Fur Co., the expenses I have made to forward St. Martin are $4. I am your obd, servant

C. H. Beaulieu

[Item number (6096)—L. B. C. 9:421]

Montreal 26 April 1839

Ramsay Crooks. Esquire
President Amer. Fur Co.

Dear Sir:

. . . He [Beaulieu] said he had written you & we suppose he gave you an account of his progress—as also a very unfavourable account of Alexis St. Martin. He says he is much addicted to drinking & his family destitute of clothing: & is much afraid, should he get advances, that he would find means of evading his engagements—He however says he is willing to engage—Little faith can be placed in his promise. . . . We are Dear Sir

Your Obt. Servants
Vallee Boyer & Co.

[Item number (6173)—L. B. C. 10: 15-16]

Care Vallee Boyer & Co

Office of the American Fur Company
New York 8 May 1839

William Morrison Esq.
Berthier—Lower Canada

Dear Sir,

I was duly favored with your esteemed letter of 6 ult.: and am fully satisfied our friend Doctor Beaumont is almost sure to lose the money he may advance Alexis St. Martin, who is so utterly worthless that I by all means recommend that nothing more be done with him till you hear again from the Doctor After he is aware of what St. Martin's present character is, and if he still insists on having him, there is no doubt of the route by Cleaveland being by far the best. . . .

Ramsay Crooks

[Item number (6234) L. B. C. 10: 54-55]

Berthier Lower Canada
15 May 1839

Ramsay Crooks Esq.
President Am. F Co.

My Dear Sir:

. . . Alexis St. Martin & family—must remain quiet—until further orders from our friend the Doctor—had Alexis left—no money would have been paid to him—his passage would have been paid to Buffaloe—at Montreal and from Buffaloe—the agent there would have sent him on—the same as baggage—The Doctor must have him—so as to go on with further experiments required for foreign countries. In hopes of hearing from you in time I remain

My Dear Sir Most Respectfully Yours. William Morrison

ACKNOWLEDGMENT

I am indebted to Dr. Saul Jarcho for assistance at all stages in the preparation of this paper. The discovery of these letters verified his brilliant inference that they must exist.

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A REPLY TO DR. SIGERIST'S "OPEN LETTER TO UNESCO" *

The Bulletin has received the following communication addressed to The Editor, from the office of E. J. Carter, Head, Libraries Division of the United Nations Educational, Scientific and Cultural Organisation.

There is, we are sure, no reason for Unesco to apologise in making a response to Dr. Sigerist's most interesting open letter published in the March-April issue of the Bulletin. At least, there is no reason to apologise at the start, although at the close of the letter there may be reason to apologise for the fact that all the things which Unesco is doing to answer Dr. Sigerist's problems have not yet borne fruit. Dr. Sigerist presented his problems as a number of trifles. They are trifles which are so numerous, however, that they build up to this immensely complex and large problem of international cultural communications. It may also be suggested that Dr. Sigerist's letter was particularly valuable just because it presented the point of view of the individual working scientist. It is always helpful to Unesco, which to such a large extent must deal with governments and institutions, to have its feet placed firmly on the ground of individual needs.

We can agree, without reserve, that "books are one of the chief means of spreading knowledge and culture." This has been recognized by Unesco from the start, and a very large number of Unesco projects are aimed at assisting the free interchange of publications and of making the thought of man recorded in print readily accessible.

The Third General Conference of Unesco, recently held in Beirut, passed many resolutions dealing with the free flow of publications. Some of the resolutions dealt with the problem in broad terms, others dealt with such specific techniques as those of book exchange and the establishment of national exchange bureaux, or the establishment of a system for international book coupons. It is fair to say that every one of the problems posed by Dr. Sigerist comes legitimately within Unesco programmes, including his last problem of carrying his typewriter across national frontiers.

But as an intergovernmental organization Unesco must by necessity concentrate on problems of interest to most of its Member States and must

* Cf. *Bull. Hist. Med.*, vol. 22, no. 2, March-April, 1948, pp. 213-218.

also give priority to "across-frontier" problems as opposed to "within-frontier" ones. Unesco is accordingly more directly concerned to help a scholar in Firenze to obtain a book from Edinburgh, than to try to speed up the delivery of a publication from Baltimore to New York.

The following are some of the precise instructions given to the Organization by the General Conference:

To "purchase and distribute, within the limits of allocated funds, books, educational material, scientific and technical equipment";

To "maintain clearing-house activities to provide and assist in the collection, allocation, distribution, and exchange of publications";

To "promote the organization, maintenance and development of national book exchange and distribution centres";

To "continue and intensify its efforts to remove existing obstacles to the free flow of ideas by word and image";

To "encourage the inexpensive production of books, periodicals and teaching materials"; and

To "operate an international book coupon scheme to permit institutions and individuals in 'soft'-currency countries to buy books and periodicals from 'hard'-currency countries and study its possible extension to other materials of education, science and culture."

The question of reconstruction pervades Unesco's activities, and almost every part of our work accepts reconstruction needs as having top priority. Unesco has studied the serious world paper shortage in detail and tries to focus attention on this serious problem hoping in this way to assist paper-starved countries. As far as possible we are assisting other organizations who command funds in the allocation of their money for the purchase of books, educational material, and so on, so that, as we have expressed it in connection with certain library programmes, "*exactly stated needs are met in as exact a way as possible*." But reconstruction does not imply simply the distribution of gifts, important as those may be: it is much more important to assist in the creation and development of agencies and in the development of techniques which will be continuing and effective means of assuring the free flow and the proper use of materials on education, science and culture. Thus Unesco is actively promoting inter-library exchanges, not because exchanges are to be preferred to direct purchase as a means of building up library resources, but because in the present chaotic state of the world it is often easier for institutions to exchange their publications than to involve themselves in all the delays

and other difficulties of purchase across national frontiers. In connection with the development of exchange services, which, of course, have existed as part of the established means of scientific communication for many years, we are attacking all the incidental barriers of customs, excessive postage and freight charges, censorship and so on.

It is only fair to stress that as far as cultural communications are concerned, Dr. Sigerist is fortunate as compared with many of his colleagues, not least because he is among the lucky few who have dollars at their disposal. He certainly realizes that Unesco is more immediately concerned with the plight of his colleagues in soft-currency and war-devastated countries who have no means at all of ordering books from abroad. But the problem cannot be separated into problems of the "haves" and the "have-nots." The world of science and learning is one and the work of all is injured by the present bad state of cultural communications.

At the start of Unesco's career, we were recommended to study the possibility of establishing a system of international book coupons to enable libraries and also individual scholars and scientists to purchase foreign books without the delays and hindrances which restrict free purchase at present. It has taken a long time to work out the system which has now been launched on an experimental basis. The system is quite simple, even though its application involves fairly complex machinery. In co-operation with half-a-dozen Unesco Member States, Unesco is now issuing "coupons" backed by available doller resources from Unesco's budget, which can be purchased, according to the convenience of the purchasing countries, in any one of Unesco's officially acceptable currencies, i. e. U. S. dollars, pounds sterling or French francs. (Later we hope to make the coupons purchasable in the currencies of all Unesco Member States). The coupons will be sold by the national distributing agencies to libraries and individuals in the participating countries, who will thus possess a negotiable currency which they can send to book-sellers in the other countries from which they wish to purchase books. The book-seller will accept Unesco book coupons, fulfill the order directly and without delay, and will return the coupons to Unesco, who will re-pay the book-seller in his own currency.

The book coupon scheme is one only of our projects which is reaching maturity. It is described at length as an example of Unesco's effort to deal with a real and practical problem in a realistic and practical way.

Results are bound to appear slowly and in most cases hardly noticeably.

But every time Unesco has contributed to the efforts to overcome a cultural barrier, or has proved of assistance to a worker in the educational, scientific and cultural field, we feel our work rewarded and our efforts justified. And it cannot be stressed enough or too often that Unesco's work depends on the active and enthusiastic co-operation and support of governments, voluntary organizations, institutions, and, most of all, of "plainworkers" like Dr. Sigerist and his colleagues.

MEDICO-HISTORICAL NEWS AND ACTIVITIES

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE

Twenty-second Annual Meeting, Lexington, Kentucky

May 22-24, 1949

The Twenty-second Annual Meeting of the American Association of the History of Medicine will be held in Lexington, Kentucky, May 22-24, 1949. In this connection the following announcement has been received from Dr. Waller O. Bullock, Chairman of the Program Committee:

The program committee desires to learn of any studies by its members sufficiently advanced to permit presentation before the meeting of the Association to be held in May 1949 at Lexington, Kentucky. Please submit title with abstract immediately to the Chairman of the Program Committee for consideration.

WALLER O. BULLOCK, M. D., *Chairman*
Program Committee
American Association of the History of Medicine
190 N. Upper Street
Lexington 15, Kentucky

COMMITTEE ON MEDICAL HISTORY IN LATIN AMERICA

(Preliminary Report)

I had the opportunity on the occasion of a visit to South America several months ago, to accumulate some information with regard to the present status of the study of medical history in Latin America, and the following facts are submitted with the hope that an opportunity will be given during the coming year for their amplification. Incidentally, I am going to visit Brazil, Uruguay, Argentina and Chile again in July and I shall at that time follow up personally my investigation.

ARGENTINA

Buenos Aires

On inquiry I found that there are two journals in Argentina, the *Revista Argentina de Historia de la Medicina,* and the *Publicaciones de la Catedra de Historia de la Medicina.* Both of these publications were edited by Dr. Juan Ramon Beltran, former Professor in the University of Buenos Aires, who recently died.

There is a Sociedad Argentina de la Historia de la Medicina in which Dr. José Luis Molinari is interested; and an Ateneo de la Catedra de Historia de la Medicina, connected with the Faculty of the University of Buenos Aires.

The new Professor of Medical History is Anibal Ruiz Moreno, Calle Cerrito 1521, Buenos Aires.

The Assistant Professor is Angel E. Roffo, Calle Catamarca 2651 Olivos, Buenos Aires; and the Docente Libre is Dr. José Maria Leire, Calle Salta 352, Buenos Aires.

As a history of medicine in Argentina, the *Historia de Medicina de Argentina*, by Felix Garzon Macedo, was recommended.

Cordoba

In Cordoba I was informed that Dr. Enrique Aznares was the man most interested and best informed on medical history. I met him and he gave me several of his publications which have been delayed in transit, but which I still hope to receive.

Rosario

Dr. Ricardo Caballero, Universidad del Litoral, is Professor of the History and Doctrine of Medical Science (Profesor de la Historia y Doctrina de la Ciencia Medicina).

La Plata

A journal has been published in La Plata (*Archivos Argentinos de Historia de la Medicina*) and there is also a society there, Sociedad de Historia de la Medicina de La Plata, Calle 50, No. 374 La Plata, Argentina.

BRAZIL

Rio

A number of people told me that Dr. Leonidio Ribeiro was the man best known as medical historian and I have two of his books, one in English—*Brazilian Medical Contributions* (Livraria José Olympio Editora), Rio, 1939; and a volume of the *Arquivos de Medicina Legal e Identificacão*, Rio, Imprensa Nacional, 1940.

I was also told that Dr. Pedro Nava has written an excellent History of Medicine in Brazil.

São Paulo

In São Paulo there is a Society of Medical History (Sociedade la Historia de La Medicina).

Dr. Almeida Prado, Professor of Medicine and Dr. Flaminio Favero, Professor of Legal Medicine, appeared to be the men most interested in medical history.

I secured two volumes of a History of Medicine in Brazil, *Historia da Medicina No Brasil*, by Lycurgo Santos Filho, (Editora Brasiliense Ltda, São Paulo).

URUGUAY

I was told by my informers in Uruguay that Dr. Rafael Schiaffino, ex-Professor of Hygiene, who is connected with the Ministry of Public Health, was the leading medical historian of the country.

CHILE

In Chile I was told that Dr. Alejandro de Garreton Silva, Professor of Clinical Medicine, was the leading authority on medical history in that country.

Through the mail I received three interesting books on historical subjects from *GUATEMALA.*

Les Ciencias Medicas en Guatemala Origen y Evolución, Carlos Martinez Duran, Guatemala, C. A. Tipografia Nacional, 1945, who I understand is an honorary member of the American Association of the History of Medicine.

Historia de la Real y Pontificia Universidad de San Carlos de Guatemala (History of the Royal and Pontifical University of San Carlos of Guatemala) by Ricardo Castañeda Paganini.

A monograph on "*Oncocercosis*," Impreso en la Imprenta Universitaria, Guatemala, 1947, which had been prepared in connection with the Third Pan American Congress of Ophthalmology to be held in Havana, January, 1948.

In conclusion of this report I must mention that the first thing for anyone interested in Latin American Medical History to do is to consult the excellent book—*Aesculapius in Latin America* by Dr. Aristides A. Moll, published by the W. B. Saunders Company, 1944. This book has not only an excellent well illustrated text but a most interesting appendix giving a "chronology of disease" as well as a "medical and general chronology for Latin America," and a thirteen page bibliography.

Respectfully submitted,

CHEVALIER L. JACKSON, Chairman
Committee on Medical History in Latin America

May 27th, 1948 *

CONSTITUENT SOCIETIES

The Caducean Society, The Creighton University School of Medicine, Omaha, Nebraska.

The Caducean Society has commissioned Dr. Stelios C. Samaras who is currently in Greece to prepare a series of lectures on Early Greek Medicine to be given this winter upon his return. Dr. Samaras is Professor of Experimental Medicine at Creighton Medical School.

Johns Hopkins Medical History Club.

On November 22, 1948, the Johns Hopkins Medical History Club held its first meeting of the academic year in the Great Hall of the Welch Medical Library. Dr. Victor A. McKusick spoke on "Max Brödel's Ulnar Palsy," demonstrating in this connection a number of Brödel's sketches which have not been published before. Mr. Hedley Atkins, Director of the Department of Surgery, Guy's

* Corrected copy, July 12, 1948.

Hospital, London, followed with a paper on "John Hilton, 1805-1878." Dr. George W. Corner presided at the meeting which was well attended.

NATIONAL NEWS

Army Medical Library

A current exhibit depicts one hundred and eight years of cataloging and indexing in the Army Medical Library. The exhibit includes the earliest catalog, 1840, a manuscript listing 135 titles, the first printed catalog, May 10, 1864, giving 485 titles, as well as some of the following catalogs, especially those prepared under the direction of John Shaw Billings. Also displayed is the first volume of the *Index Medicus* which the Library conducted from 1879 to 1927, together with the first and latest volumes of the *Index-Catalogue* and several issues of the *Current List of Medical Literature*.

New York

On December 2, 1948, the Edwin Smith Papyrus was presented to the New York Academy of Medicine by Dr. Fenwick Beekman, President of the New York Historical Society, and Mr. Sidney Davidson, Chairman of the Governing Committee of the Brooklyn Museum (*J. A. M. A.*, Dec. 18, 1948, p. 1183). The papyrus which represents one of the most important documents of ancient Egyptian medicine and ancient surgery in general had been acquired by Edwin Smith in 1862 and was published by the late James Henry Breasted together with translation and commentary in 1930.

The Seminar in the History of Medicine of the Mount Sinai Hospital held two sessions with the following programs:

October 26, 1948:

"The Aphorisms of Hippocrates"	Robert Wallerstein, M. D.
"The Hippocratic Treatise on Fractures"	Robert S. Siffert, M. D.
"The Precepts of Hippocrates"	Benedict Bernstein, M. D.
"The Guide for Physicians (Musar Ha-Rophim) of Ishaq ibn Sulaiman Al-Israeli"	Louis Schaefer, M. D.

Discussion: Solon Bernstein, M. D., Edward Grossman, M. D.

November 30, 1948:

"Sydenham's Essay on Gout"	Robert Newburger, M. D.
"George Cheyne and His Essay on Gout"	Meyer Texon, M. D.
"Brief History of Colchicine"	Irving Solomon, M. D.
"The Jew as Physician"	Israel Wechsler, M. D.

Personalia

Dr. Douglas Guthrie, Lecturer on History of Medicine at the University of Edinburgh and author of *A History of Medicine*, will sail from Liverpool on January 13 for a tour to this hemisphere. Although the main objective of his

tour is Latin America, he will return home via the United States, flying from Mexico to Washington on April 8 and sailing from New York on April 22. Dr. Guthrie has been invited to lecture in Baltimore before the Johns Hopkins Medical History Club on April 12, as well as in Philadelphia and New York.

The Cleveland Plain Dealer of December 18, 1948, reports the election of Dr. Howard Dittrick as Honorary Member of the Academy of Medicine of Cleveland. From 1946 to 1948 he served as Secretary of the American Association of the History of Medicine, and all those who attended the Annual Meeting in Cleveland in 1947 will also remember the magnificent Museum which bears his name. In congratulating him on the honor received, the *Bulletin* expresses the hope that Dr. Dittrick who is now retiring as editorial director of the Cleveland Clinic, will be able more than ever to devote himself to his medico-historical interests.

Dr. George Rosen has been appointed a member of the Editorial Board of the *American Journal of Public Health*. In this connection Dr. Rosen conducts a regular department in the *Journal* on "Public Health in Foreign Periodicals." On October 27, 1948, Dr. Rosen was invited to deliver the Eleventh Annual Louis Gross Memorial Lecture in Montreal under the auspices of the Montreal Clinical Society. The subject of the lecture was "The Idea of Social Medicine in America." The fall Forum of the Cooper Union in New York honors the late Morris Cohen, former Professor of Philosophy at the College of the City of New York. The Sunday series of the Cooper Union Forum will be devoted to the subject, "The Meaning of Human History," the topic of Professor Cohen's last book. On November 21, Dr. George Rosen will contribute to this series with a discussion of "The Biologic Element in History."

NEWS FROM ABROAD

Brasil, Rio de Janeiro

The Instituto Brasileiro de História da Medicina, President, Dr. Ivolino de Vasconcellos, announced a meeting for September 27, 1948, the first part of which was to be devoted to the memory of Conselheiro Dr. Joaquim C. Soares de Meirelles. The second part comprised papers by Dr. Ordival Gomes on "A Scuola de Alexandria" and Dr. Ivolino de Vasconcellos on "Dois Apóstolos dos Lázaros no Brasil." Dr. Luiz Lamego is first secretary of the Institute.

Scotland

The University of Glasgow announced the following lectures on history of medicine by Dr. Douglas Guthrie:

October 26: "The Historical Background to Medicine"
November 2: "Great Epidemics of History"
November 9: "Evolution of Medical Education in Scotland"
November 30: "The Pursuit of the Infinitely Small (History of Microscopy)"
December 7: "Medicine in Literature."

The Scottish Society of the History of Medicine held its third meeting in Glasgow with Dr. Douglas Guthrie in the chair and papers presented by Professor

J. D. Mackie of the Chair of Scottish History and Literature, University of Glasgow, and Mr. A. L. Goodall, Honorary Librarian to the Faculty. The papers dealt with the early history of Glasgow and its medical Faculty founded in 1599 by Peter Lowe, which united physicians and surgeons in one body.

Sweden

The Svenska Läkaresällskapets Medicinsk-Historiska Sektion announced a meeting for October 15, 1948 which comprised the following papers: Professor Gustaf Petrén, Lund: "On blodstransfusion i gången tid enl. uppgifter i svensk medicinsk litteratur," and Wolfram Kock: "Nils Rosén von Rosenstein."

ERRATUM

Dr. Erwin H. Ackerknecht has drawn our attention to an unfortunate error which occurred, after he had returned proof, in his article on "Anticontagionism between 1821 and 1867," published in the September-October, 1948, issue of this *Bulletin*. On page 562, line 21 should read: "And I dare to hope that the kind and shy shadow of the man who among" etc.

BOOK REVIEWS

PIERRE MONTET. *La Vie Quotidienne en Egypte au Temps des Ramsès (XIIIe-XIIe siècles avant J.-C.)*. Paris: Librairie Hachette, 1946. 348 pp. Fr. 170.

The people's daily life in various periods of history, their work in field, shop and office, their rest and recreation, food, housing, clothing, living conditions in town and country, in times of peace and times of war, are all matters of great interest not only to the general historian of civilization but to the historian of medicine as well. Indeed, man's life unfolds itself in a physical and in a social environment and both may be conducive or inimical to health. There is a strong interrelationship between the two but the mode of living seems even more important to me as a factor of health, because man is extremely adaptable to physical conditions and has learned to master nature in many ways, while a wrong mode of living, bad working conditions, lack of recreational opportunities will affect health adversely even in the best physicial environment. The historian of medicine, therefore, can never ignore what the people's daily life has been and every book on the subject is most welcome.

The daily life of the ancient Egyptians has attracted many archaeologists because we have such a wealth of source material, literary and particularly pictorial. The walls of the tombs are covered with pictures of everyday life of all groups of the population, because they represent not only the exalted dead but his entire household, the domestic servants, the serfs in farm and shop, and even the pet animals. As early as 1837 Sir John Gardner Wilkinson wrote a famous three-volume book on *Manners and Customs of the Ancient Egyptians* which went through a number of different editions. G. Maspero wrote in 1890 a well-known little book, *Au Temps de Ramsès et d'Assourbanipal*. I remember that in its 5th edition of 1910 it was sold in France even in kiosks of railroad stations, and as very young students we read it with the greatest delight. The book by the way has a special chapter on "Disease and Death." In recent times we had two very good German books on the subject, *Das alte Aegypten* by A. Wiedemann published at Heidelberg in 1920 as a volume of the *Kulturgeschichtliche Bibliothek* and Adolf Erman's great old book *Aegypten und ägyptisches Leben im Altertum*, first published in 1885 and reissued in 1923 in an edition completely revised by Hermann Ranke.

And now we have a new book by a French Egyptologist who is thoroughly familiar with the subject. In 1925 he published an excellent study on private life as depicted in Egyptian tombs of the Old Kingdom.[1] It was a good idea to base the chief facts of the book on conditions as they prevailed at a certain period, one that covers the two centuries from about 1320 to 1100 and can boast of three great rulers Seti I, Ramses II and Ramses III, a period, moreover, for which the sources are particularly rich. But even so Montet had to borrow a great deal from other periods in order to fill in gaps.

[1] Pierre Montet, *Les scènes de la vie privée dans les tombeaux égyptiens de l'Ancien Empire*, Paris and Strasbourg, 1925.

It is a good book, full of information, well documented and it reads well. Beginning with the house, it then discusses time (seasons, holidays, lucky and unlucky days etc.), the family, housekeeping, life in the country, arts and crafts, travelling, pharaoh and his court, the army and war, scribes and judges, activities in the temples and finally funerals. It is not as comprehensive as Erman-Ranke, and it has no illustrations. I know that many books are illustrated without necessity just as a matter of ornament or to increase the price, but this is the kind of book that simply *must* have pictures, particularly since there are so many available which tell the story so much better than words can. It would of course raise the cost of the book, but it would increase its value ten times.

Another great defect is that the book has no index. It is intended for the general reader rather than for the specialist, but such a book is also consulted for reference by people who are interested in one particular subject. In my opinion the book of Erman-Ranke is still unsurpassed, and since it is probably out of print I hope that a new edition is being considered.

Montet's book is part of a series, " La Vie Quotidienne," in which eight volumes have come out so far and half a dozen more are in preparation.

HENRY E. SIGERIST

ARTHUR N. FOX. *Plague; Laennec (1782-1826) Inventor of the Stethoscope and Father of Modern Medicine.* New York: The Hobson Book Press, 1947 viii + 122 pp. $2.50.

This little book of one hundred and twenty pages first appeared in 1930 and in a very limited edition of six copies. This, the second edition, has been reproduced for general distribution.

The essential details of Laennec's life, his discovery of the stethoscope, his influence on medical thought and on the development of modern medicine are so well known as to be largely taken for granted by the author. The development of Laennec's personality, his youthful fears and dreams, his impressions from the scenes of slaughter and terror which were such a part of his childhood, his interest in natural history, his early attempts at poetry form the main theme of this little work. In a series of vivid pictures we see Laennec in Nantes, working at medicine under the watchful eye of Uncle William, a patient and industrious doctor who did not share his nephew's interest in drawing, dancing and music and complained that " Since April, it is not two but six hours a day devoted to music; it is no longer the flute alone, but singing too." In marked contrast to his orderly and methodical uncle, René's father was a carefree, tactless and somewhat irresponsible person and advised his son to swim, ride horses, play the flute, sing, dance, draw, study poetry, Latin, geography, history, politics, economics, learn how to present himself in society, and, above all, to refrain from gossiping. " If from his uncle he learned patience and diligence, from his father he gained a recognition of where these rightfully ended."

At Paris he worked hard, was charmed by the gentle Pinel, who showed that

insanity should be treated with kindness, was amazed at the methodical Bichat, was fascinated by the brilliant Corvisart, who had a genius for attracting youth and brilliance, and found in Bayle a kindred spirit and a congenial fellow worker. He read Hippocrates and wrote with enthusiasm: "Observation, experience and reason lean upon each other, and these are, according to Hippocrates, the only means of acquiring knowledge in medicine and arriving at the end of this science; the cure of the patient." In Hippocrates, too, he found the suggestion that led to his great discovery, auscultation.

Already a victim of tuberculosis, he studied the white plague while he coughed and burned with fever. Finally, in 1819, he published his *Mediate Auscultation* and withdrew to Kerlouarnec, which "was only an Elba." Once more he returned to Paris, was received with acclaim, made a professor, lectured to crowds of students, but the White Plague struck him down again with chills and high fever. He returned to Kerlouarnec to die.

This little book is written with so much deftness of touch, such charm, such exciting narrative in some places and such pathos in others, that it may create the impression of being a fictional biography, but it is not. It presents Laennec in a new light and stresses certain interesting facts and incidents, often passed over or inadequately indicated by his biographers.

RALPH H. MAJOR

THE BULLETIN OF THE HISTORY OF MEDICINE IN 1949

Under the date of December 2, 1948, the following agreement was signed by President Isaiah Bowman for the Johns Hopkins University and Dr. Henry R. Viets, President, for the American Association of the History of Medicine.

Agreement Between the American Association of the History of Medicine and the Johns Hopkins University in Regard to the Publication of the Bulletin of the History of Medicine

This agreement between the American Association of the History of Medicine and the Johns Hopkins University is made for the purpose of continuing the publication of the Bulletin of the History of Medicine for a period of one year from January 1949. Both parties agree to the following stipulations which are hereby made a part of the agreement:

1. The Bulletin is to be recognized as the organ of the Association and of the Institute of the History of Medicine of the University.

2. The University is the sole owner of the Bulletin and assumes full responsibility for its publication, both editorial and financial.

3. All active members and honorary members of the Association and the Constituent Societies of the Association shall receive subscriptions to the Bulletin free of charge in return for which the University shall be reimbursed by the Association on the basis of a schedule of rates set forth below.

4. The Editor of the Bulletin is to be selected solely by the University.

5. The Editor shall have the sole responsibility for determining what matter shall be published in the Bulletin except as specified in the next following stipulation.

6. The minutes of all business sessions of the Association, and of all meetings of the Council of the Association, shall be published in the Bulletin, provided that the total number of pages devoted to this material in any one volume shall not exceed 5 per cent of the entire volume.

7. The Bulletin shall contain a minimum of 500 pages of printed matter exclusive of advertisements during the year but shall not exceed a maximum of 800 pages.

8. The regular subscription price shall be $6.00 a year in the U. S. A. and its possessions, $6.25 a year in Canada, and $6.50 a year in foreign countries.

9. The University shall be reimbursed by the Association for subscriptions sent to active members of the Association and to the Constituent Societies in accordance with the following schedule of rates:

$5.00 per year in the case of active members and
$6.00 in the case of Constituent Societies.

10. A financial report of the publication of the Bulletin will be rendered to the Association as soon as possible after the close of the year.

11. This agreement expires as of December 31, 1949, unless renewed.

By action of President Isaiah Bowman of the Johns Hopkins University, Dr. Owsei Temkin has been appointed Editor of the Bulletin of the History of Medicine *for the period January 1, 1949, to December 31, 1949.*

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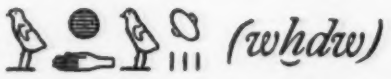
SUPPLEMENTS TO THE BULLETIN OF THE HISTORY OF MEDICINE

Founded by HENRY E. SIGERIST

Acting Editor: GENEVIEVE MILLER

No. 10



AETIOLOGICAL PRINCIPLE OF PYAEMIA IN ANCIENT EGYPTIAN MEDICINE

BY

ROBERT O. STEUER

While *wḥdw* is one of the few Egyptian medical terms known to students of medical history, its meaning has been variously interpreted by medical historians and Egyptologists. Using Egyptological methods, the author has found that *wḥdw* designates an aetiological principle rather than the name of a disease. The various aspects of the principle, including its relation to wound infections, are determined on a broad basis of ancient Egyptian texts with interesting side glances upon Hippocratic and Aristotelian ideas.

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